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ACCESS TO QUALITY COMMUNITY COLLEGE OPPORTUNITY, A MASTER PLAN FOR MASSACHUSETTS COMMUNITY COLLEGES THROUGH 1975. SUMMARY REPORT.
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MASSACHUSETTS STATE BOARD OF REG. COMMUNITY COLLS.
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THIS SUMMARY REPORT REAPPRAISES THE 1958 MASTER PLAN AND PROJECTS THE COMMUNITY COLLEGE SYSTEM TO 1975 ACCORDINGLY. IT COVERS ALL ASPECTS OF SUCH A SYSTEM AND MAY SERVE AS A GUIDE TO OTHER STATE OR REGIONAL PLANNERS. ITS CONSIDERATIONS INCLUDE (1) A PHILOSOPHY OF HIGHER EDUCATION, (2) THE PURPOSE AND FUNCTION OF THE MASSACHUSETTS COMMUNITY COLLEGE (ITS LEGAL SETTING, CHARACTERISTICS, OBJECTIVES, AND SUBSIDIARY SERVICES), (3) OCCUPATIONAL EDUCATION, (4) THE 1965 STATUS OF THE COLLEGES (POLICIES FOR ESTABLISHMENT AND PLANT, STAFF, LIBRARIES, FACULTY, ADMISSIONS, PLACEMENT OF GRADUATES, OPERATING COSTS), (5) CURRICULUM (LIBERAL ARTS, OCCUPATIONAL, CONTINUING), (6) PROJECTED ENROLLMENTS AND PRIORITIES FOR NEW OR EXISTING FACILITIES, ADDITIONAL COLLEGES, (7) ESTIMATES OF SPACE NEEDS AND OF CAPITAL AND OPERATING COSTS, (8) THE SYSTEM'S CENTRAL OFFICE (ITS RESPONSIBILITIES TO THE BOARD IN ADMINISTRATIVE, SUPERVISORY, COORDINATIVE, AND OPERATIONAL FUNCTIONS, AS WELL AS THE PROVISION OF LEADERSHIP AND LIAISON SERVICES, AND THE SUPERVISION OF OVER-ALL RESEARCH PROJECTS AND THEIR STAFFING), AND (9) 22 CONCLUSIONS AND RECOMMENDATIONS, INCLUDING A SUGGESTION FOR A NEW MASTER PLAN STUDY WITHIN THE NEXT TEN YEARS. AN ADDENDUM WITH INFORMATION ON THE CHANGES IN THE SYSTEM BETWEEN MAY 1967 AND FEBRUARY 1968 IS INCLUDED. (HH)

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Access To Quality Community College Opportunity

A Master Plan for Massachusetts Community Colleges through 1975

A SUMMARY REPORT

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The Commonwealth of Massachusetts

TRANSMITTAL

CHAIRMAN, PRESIDENT AND MEMBERS OF THE MASSACHUSETTS BOARD OF REGIONAL COMMUNITY COLLEGES:

A Summary Report of the Master Plan for Massachusetts Regional Community Colleges, prepared under legislative authorization contained in Chapter 640, Acts of 1964, is transmitted herewith.

Special appreciation is extended to Dr. William G. Dwyer, President and John V. Costello, Executive Director of the Massachusetts Board of Regional Community Colleges, for their guidance and advice. Also, grateful thanks is given to Dr. Richard V. McCann and the Massachusetts Higher Education Facilities Commission which provided office space and facilities for the duration of this study.

Although many persons, organizations and agencies were involved in the preparation of the study and text, the opinions, conclusions and recommendations contained herein are the sole responsibility of the author.

DONALD E. DEYO
May 5, 1967

UNIVERSITY OF CALIF.
LOS ANGELES

APR 15 1968

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

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PREFACE

The Massachusetts Board of Regional Community Colleges has the statutory responsibility for developing a state-wide system of colleges at the community and junior college level in accordance with a coordinated plan. Chapter 15, section 28, of the General Laws provides:

> "The duties of the board . . . shall include the determination of need . . . , the development and execution of an over-all plan to meet this need and the establishment and maintenance of regional community colleges at suitable locations in accordance with this plan."

The plan under which the Board has been developing the system thus far is that recommended by the State Commission on Audit of State Needs (1958). The Legislature appropriated money in 1964 for a new master plan, and the report submitted herewith is the result. This master plan has two purposes:

1. To reappraise the 1958 plan and examine accomplishments under it, and

2. To project the community college system to 1975, taking into account the new circumstances created by the institutions established under the 1958 plan, up-to-date data on the economy, society, and demography of Massachusetts, and current perceptions of the place, role and function of the community college.

This *Summary Report* is a précis of the highlights of the main report. It is the intention of the Board that this brief presentation be given the widest possible circulation. The full text of the main report has not been published, but it is available in unedited mimeograph form in the Community College central office, Room 74, State House, for those who wish to consult it. Ultimate publication of the full report will depend upon whether or not there appears to be sufficient interest and need to warrant such printing.

The Board was fortunate in retaining Donald E. Deyo to make this study and report. He is a national authority on community colleges, with nearly thirty years of experience in the field as teacher, administrator, college president and consultant. He is a past president of the American Association of Junior Colleges. Mr. Deyo has spent the better part of the last two years in preparing the full report, of which this publication is a summary.

The Massachusetts Board of Regional Community Colleges has accepted this report and the accompanying recommendations as its master plan for the further development of the community college system in Massachusetts. The Board hopes that this Summary will be widely discussed, and will welcome comments and suggestions from all persons who are interested in the subject.

THEODORE CHASE, *Chairman.*
Massachusetts Board of Regional Community Colleges

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A MASTER PLAN FOR MASSACHUSETTS COMMUNITY COLLEGES

Summary Report

INTRODUCTION

In March, 1958, a State Commission on Audit of State Needs established under Ch. 38, Resolves of 1957, filed a special report entitled *Needs in Massachusetts Higher Education with Special Reference to Community Colleges,* which contained a recommendation for the development of a community college system. This recommendation was adopted by the General Court on August 11, 1958, in Ch. 605, Acts of 1958 (and signed by the Governor on October 6, 1958). The Act constitutes the basic enabling legislation for the regional community college system.

Accepting the data compiled in the *Audit* report as the "determination of need" and the nine regions recommended by the Commission as the "overall plan to meet this need", the new Board of Regional Community Colleges between the fall of 1960 and 1965 established nine community colleges with classes starting in September of the year indicated:

Berkshire—1960
Massachusetts Bay (Boston)—1961
Cape Cod—1961
Northern Essex (Haverhill)—1961
Greenfield—1962
Quinsigamond (Worcester)—1963
Holyoke (formerly operated by the Holyoke School Committee)—1964
Mt. Wachusett (Gardner)—1964
North Shore (Beverly)—1965

The next significant Act of the General Court concerning the community college system was Ch. 737, Acts of 1964, (passed July 3, and signed July 9, 1964) which granted fiscal autonomy to the Board of Regional Community Colleges parallel to that previously enacted for the University of Massachusetts and the State College system.

Having operated under the *Audit* report as a Master Plan since 1958, the Board sought and secured an appropriation of $100,000 (item 8065.41 of the Commonwealth's capital outlay program), Ch. 640, Acts of 1964, (passed June 30, 1964 and signed July 2, 1964).

> For the development of a master plan for a system of regional community colleges throughout the commonwealth, and for the preparation of preliminary plans for a community college to be located in southeastern Massachusetts.

From the capital amount, W. A. Waldron, then Commissioner of Administration and Finance, allocated $10,000 for the latter purpose. It is under Ch. 640 that this Master Plan has been developed.

The most recent Act significantly affecting the community college system is the so-called Harrington-Willis Act, Ch. 572, Acts of 1965 (passed June 21, 1965 and signed June 28, 1965). This Act, substantially reorganizing and restructuring the entire educational system in Massachusetts, retains essentially the language of previous Acts regarding the duties of the Board of Regional Community Colleges for "planning, establishing and maintaining regional community colleges". If the recommendations and expectations of the Willis Commission are realized, the advantages of planning will be evident. The disagreements and strains among institutions will be reduced or eliminated and replaced with differential functions which are protected. There can be more variety and quality in program offerings, a higher quality of service because competition, duplications, and proliferation are diminished. Public attention will be transferred from individual institutions to the *system* of higher education. Long range plans will justify public confidence and support *because* they are understood; the public, legislators, and public officials will be better disposed toward higher education *because* it is planned and coordinated.

This Master Plan is another step in systematic planning taken since 1958. Presumably it too, like the 1958 plan, will be reappraised and projected beyond the present terminal date by other and subsequent master plans. The Master Plan, then, has two purposes:

1. To reappraise the 1958 plan and examine accomplishments under it. For the most part, fiscal and academic 1964-65, ending June 30, 1965, is the terminal date for this aspect of the Study, except insofar as North Shore Community College, commencing operations in September, 1965, can be included.
2. To project the community college system, taking into account the new circumstances created by the institutions started under the 1958 plan, up-to-date data on the economy, society and demography of Massachusetts, and current perceptions of the place, role and function of the community college. For the most part, the endpoint of these considerations is fiscal and academic 1974-75, ending June 30, 1975, but including some projections to September, 1975.

THE TENETS OF HIGHER EDUCATION

No planning or forward look can be undertaken without some philosophical tenets, whether implicit or explicit, regarding education and specifically, higher education.

Sine qua non to the concept of democracy is the idea that the success of this form of government depends on an educated, informed, articulate, responsible electorate. To the extent that citizens are not educated to their full potential, democratic society suffers social, economic and civic waste. Thus, it is argued, the survival of democracy and a free society depends on the widest and fullest development of human resources.

So basic is the role of education in a democracy that the American people, more than any other, has developed a faith in it which has become an integral part of our national heritage. Since World War II, higher education has come to be included in the "faith image" of education. Within the new role of higher education are two provisos: excellence and diversity.

Higher education is not enough; it must be quality education and quality is the degree of excellence with which an institution fulfills the objectives, functions and purposes it sets for itself. There is no other measure.

Diversity originates in two sources. The first is another facet of our national philosophy—the inherent right of individuals and groups to independent action so long as it does not interfere with the parallel rights of others. The second is the recognition that higher institutions cannot be all things to all people, each with an identically high standard of quality. Diversity has given us public institutions (to fulfill the responsibility of the state for an informed electorate) and private institutions (to fulfill the right to teach, to organize, to support, to admit, or exclude whom they wish, and to maintain the principle of free choice).

Assuming the truth of the generalization that a single institution cannot equally well serve all the diverse needs and objectives of higher education, it follows that variety is necessary. History has proved this as different types, sizes and levels of higher institutions have grown in response to emerging gaps in the panorama of education.

The community college is one of these. They are typically two-year post-secondary institutions offering occupational curriculums leading directly to full-time employment and liberal arts and pre-professional curriculums equivalent to the first two years of the common four-year baccalaureate program. Characteristically community colleges offer what is known as a "comprehensive" program including transfer and occupational curriculums, general education and community services.

The earliest concept of the responsibility of the state for public education extended only through the "common school". Basic literacy was its goal—the 3 Rs. About the turn of the 20th century, secondary education was incorporated into the concept and compulsory attendance laws were adjusted to this level. Roughly concomitant with the end of World War II, vague uneasiness began to be felt that secondary education was not enough, that the "explosion of knowledge" and the exponential rate of increase in the state of technology somehow made necessary universal access to education beyond the high school. Offsetting these views is the disquieting recognition that higher education is not for everyone —whether judged by ability or interest. At this time the issues of higher education, the universality of access to it and the extent of the responsibility of the state for advanced education in the interests of the survival and self-perpetuation of democracy have not been fully assimilated, reconciled, and incorporated into a popular philosophical concensus governing the role of education in a democratic way of life.

Now a newer issue arises—continuing education, a reoriented and perhaps more sophisticated concept of adult education. Like adult education, it is as yet undefined; like adult education, it is at this time a miscellaneous collection of educational services. But it seems to differ from adult education in a very important aspect: "education" does not terminate with the end of formal classroom instruction, but is "continuous" and the individual goes on learning as long as he is willing and able. It is recognized that one's formal education no longer is sufficient to maintain the individual effectively as citizen, worker or professional. His formal education is rapidly outdated and to "keep-up" requires continuing education. As a segment of higher education and most particularly because of its singular relationship to the community it serves, the community college will provide an important share of continuing education.

The preceding paragraphs set the philosophical parameters within which this Master Plan was undertaken.

THE PURPOSE AND FUNCTION OF THE MASSACHUSETTS COMMUNITY COLLEGES

Statutory Setting

Four comments are appropriate regarding the statutory setting for community colleges in Massachusetts.

1. The definition of function is broad and unrestrictive. In some states the enabling legislation is so precise as to be a handicap, or at least an inhibition, to the development of the community college program or system. The community college, by definition, is a growing, changing institution responding in its program and services to the changing needs of the region and of society. Within the present Massachusetts law this can be accomplished.
2. Rather than to define in the law exactly the role and responsibility of the community college, this is left to an autonomous Board of Regional Community Colleges. The Board with its professional staff and the college presidents is free to develop policies and procedures, programs and purposes.
3. There has been no question as to the place of the community college in the hierarchy of education—it is a part of higher education. It is not secondary education. Nor has it been thought of as an "entity of its own", nondescript, unclassified and unrelated to other more familiar segments of education.
4. The responsibility for post-high school vocational education is specifically assigned to the community college. For purposes of legislative intent and implementing policy, this simple statement serves easily to clarify a jurisdictional area which in many states is confused, contradictory, and conflicting. In Massachusetts such confusion should not exist.

Characteristics of a Community College

The community college has been (and continues to be) little understood; lack of understanding also makes for misunderstanding. The community college is a concept which is at the same time related to but different from other and familiar institutionalized concepts of education. Fitting between the familiar high school and college concepts, it has characteristics of each, but is totally identifiable with neither. The very attributes which make the community college different—diversity, flexibility, adaptability—are at the same time elements which challenge precise definition and, thus, make the community college difficult to understand. In none of its constituent characteristics is the community college really "unique" as is sometimes claimed. But in its totality, in the sum of its intrinsic qualities, as an educational institution, it *is* unique—different from any other category; conversely, no other educational institution is "like" the community college.

From the welter of confusion and debate concerning the characteristics and the role and function of the community college is beginning to emerge a mature and stable concept of it. This concept is applicable to the public community colleges of Massachusetts.

It is an institution for the democratization of higher education. Through its location on a regional basis, the variety of curriculums, its low cost to students, its "open door" admission policy, opportunity for higher education is extended to a significantly large segment of the total population. It provides a financial, geographic and intellectual equality of access to higher education which is not available to the general population through other public higher education institutions.

The community college is a commuting college. Students live at home and commute to classes daily. Colleges are planned to be so located as to be within commuting range, whether measured by time or distance, of 95 per cent of the total population. Since students live at home, the cost of college is reduced by the cost of subsistence necessary to attend college away from home. And there are other advantages of living at home and commuting to college.

When the student attends a resident college, he lives in a dormitory. Like his fellows, it is probably his first experience in living away from home for an extended period of time. He is replacing his old, familiar environment with a totally new unfamiliar environment—and his dormitory-mates likewise. In the community college, on the other hand, there is no substitution of an old for a new environment. The difference is that of *superimposing* a new environment on the old in contrast with the *substitution* of a wholly new total environment for the old. This subtle distinction between environments has many implications which make the community college "different" from the resident college.

One of the distinguishing characteristics of the public community college is its purpose to serve the special needs of the community (in the case of Massachusetts, the region) in which it is located. There are really two sides to the proposition: the employment needs of business, industry and government; and the educational needs of the youth and adults of the region. The college cannot serve one disregarding the other. There must be a meeting ground between the two; the needs of one must be mitigated by the other. The middle ground between them is not easy to define and the satisfactory solution in terms of college programs and services depends on the acuity and insights of the professional chief administrator and his staff.

The community college must be a comprehensive, multi-purpose institution if it is to serve its students and its total community or region. It must therefore be reasonably large if per student costs are to be within reason. In regard to size there are some rules of thumb:

1. a community college should be a comprehensive, multi-purpose institution;
2. comprehensiveness requires sufficient size for economical operation;
3. an economical comprehensive program cannot be provided unless the region can provide an initial (first year of operation), enrollment of about 300 and a second year enrollment of about 750; the institution should have a potential of growth to about 2,000 in ten years;
4. as size increases the advantages of the "small school environment" diminish and accordingly there should be an enrollment ceiling of about 5,000. In an urban situation this ceiling can probably be increased to about 7,500.

Thus far it might appear that the community college is (or ought to be) all things to all people; that in designing its comprehensive program to the changing needs of its region, it should provide something for everyone. This is too facile a conclusion, but it does provide occasion for some cautions and to define some limits. The community college, seeking to serve its region within its resources, can easily be diverted from its major and exclusive function into areas in which its jurisdiction is injudicious, questionable or inappropriate. The college must be on guard lest it undertake too much for too many or spread its resources too thin. There are some guidelines to enable the community college to judge whether its activities (or proposed activities) are appropriate:

1. The community college is a collegiate level institution; it is higher education, it is post-secondary. Its services and offerings ought to be confined to those which are clearly post-high school, typically "collegiate" in level.
2. The community college must confine itself to the lower division (the first two years) of college. It must not offer courses which are usually given in the upper division and it positively cannot offer academic credit for such courses. Above all, it must not seek or have ambitions to become a four-year baccalaureate institution.

3. The community college must always be alert to protect the quality of its activities and programs. Among the variety of educational responsibilities inherent in the role of the community college and demands placed on it will inevitably be those opportunities for service which can be rendered only at the expense of quality in these or other programs of the college. It would be better not to perform the service at all than to offer it at less than the finest level of excellence.

Objectives of a Community College

It is time now to turn from a general discussion of the role and function of the community college in Massachusetts to specific objectives. But by way of a summary of the last section and an introduction to this, a statement by the Trustees of the State University of New York in their ***Revised Master Plan, 1964*** is excellent:

> The two-year colleges are the very foundation of the University (SUNY). More and more it is they who are opening the door to higher education, revealing to the youth of the State the scope of the total university and the educational opportunities it offers them. . . . In many respects the demands upon the two-year colleges are far more complex than those faced by other units (of SUNY). These colleges must respond to the widest range of talent and offer a broad spectrum of programs including the liberal arts and technical and vocational subjects. The two-year colleges must enable a young adult to measure against the needs of society his ability and his willingness to work. They must permit him to adjust his educational and vocational goals in the light of his developing talents. These colleges must serve society by preparing the kinds of technicians our economy demands. An increasingly important task of the two-year college is that of continuing education to keep current the skills and knowledges of technical workers. An even more difficult task is that of retraining older workers displaced by technological changes. To achieve their objectives, the two-year colleges require an expert counseling service, a wide range of curricular offerings, a detailed knowledge of the needs of the economy, and the finest instruction.

Also in 1964, the New York State Board of Regents issued the following policy statement, dated February 27, 1964:

> The Board of Regents endorses the following propositions:
>
> 1. Comprehensive community colleges should be recognized and supported as the basic institutional approach to providing a broader public educational opportunity above the high school level in New York State.
> 2. These institutions should be open to all high school graduates or persons with equivalent education background, operated at low cost to the students, and located within reasonable daily commuting distance of the students' place of residence.
> 3. The comprehensive community college should be expected to perform the following specific educational functions:
>   A. *General Education*—To provide post-secondary-school general background and experience for all students in conjunction with study in their major academic fields.
>   B. *College or University Transfer Education*—To provide the requisite courses for two years of collegiate study for students who are interested and competent to carry their studies to the Bachelor's degree.
>   C. *Occupational or Terminal Education*—To provide programs of education and training beyond the high school but below the professional level, for students seeking, for whatever reason, immediate entry into the productive labor force in business, industry, or government organizations in need of employees with higher level abilities; and for persons already employed but seeking to improve or learn new skills required in our changing economic and cultural environment.
>   D. *Adult or Continuing Education*—To provide programs of continuing education appropriate to and consistent with the level immediately above the high school in the educational system to assist adults of all ages to meet changing educational, cultural, and economic conditions and to implement changes in their personal objectives.
>   E. *Guidance and Counseling*—To provide for all students the necessary testing, guidance, and counseling to enable each one to know and accept his strengths and limitations and to choose the program most suited to him in the light of objective information and his personal situation at the time.
> 4. Two-year and four-year colleges, in a planned, coordinated and complete system of public higher education, provide essential and complementary, but distinctive, services in post-high school education. Therefore, existing two-year colleges should not be converted to four-year baccalaureate college status as an approach to the expansion of college programs in any region of the State.
>
> . . . .
>
> 6. Consideration should be given . . . to formulating an admissions policy that recognizes the different educational functions of comprehensive community colleges and of baccalaureate degree-granting institutions and to moving as readily as possible toward a program of 'open door' admissions of high school graduates to community colleges.

7. **Two-year and four-year colleges, public and private, should devote greater attention to the end that students who complete community college transfer programs may be assured of ample opportunity to complete their educational objectives.**

It would be well to point out that although each function will be found in each college, the "mix" of the five functions in a particular community college will be largely determined by the educational needs, alternative educational facilities, and cultural and service resources of the college's region. The five functions will be evident to a greater or lesser extent in each college but the program of none will match that of another college.

In Massachusetts, unfortunately, all forms of adult, extension, evening and summer school education in colleges and universities are required to be self-sustaining and self-supporting. On the philosophical premise that the state is responsible to pay for (or for the major support of) higher education in the interests of an informed and educated citizenry, adult and continuing education is as much a part of the responsibility of the state as full-time day programs, at least as far as college level, college credit work is concerned. The student seeking educational advancement in summer school or part-time is entitled to the same measure of public support as his full-time counterpart; indeed, more entitled it can be argued, since the part-time student is probably pursuing his educational objectives at a considerably higher level of personal sacrifice and effort than the full-time student. To deny the part-time student access to his share of public support simply because he attends part-time (or in summer school) is to deny him equality of access to educational opportunity. The present policy cannot be defended on logical, rational or philosophical grounds; even on fiscal or political grounds it is difficult to understand.

Subsidiary Functions of a Community College

The community college usually performs additional functions, but they are generally more specific and serve more limited groups of individuals in the community. A sampling of functions of this kind follows:

1. *"The Second Chance College."* The community college provides an opportunity for educational rehabilitation for those residents of the region who have "flunked out" of other higher institutions.

2. *"Late Bloomers."* There is a small category of students who for any of a variety of reasons have not found themselves academically in previous educational experience. These can be helped by the community college more than the senior institution and their admission to the community college via the "open door" policy is appropriate.

3. *"Exploratory" function.* In spite of improving guidance services at the secondary level, more and more students are arriving at the college threshold without a career decision having been made, or frequently with a career choice which is unrealistic in terms of the student's capacities and aptitudes. This student can be encouraged to "explore" among various fields in the community college without committing himself, with the consequent loss of time if he changes his mind, to a specialized four-year curriculum. The "exploratory" function also serves those students who do not know whether they can succeed in college or indeed "if college is for them" in terms of alternative post-high school choices—marriage, military service, work, etc.

4. *"Screening" function.* Here the community college performs a useful function by "screening" its students for senior colleges. Students who demonstrate capacity and motivation for baccalaureate work are encouraged to continue; students whose ambitions and career decisions are unrealistic are discouraged from continuing and assisted in self-reappraisal and a better career choice.

5. *Deficiency function.* Sometimes students finish secondary schools without proper preparation for senior college or whose plans have changed leaving their preparation inadequate for the field they now wish to enter. The community college often can assist this student.

6. *Community services.* Often the community college, especially those in more rural or isolated regions, can provide community services which heretofore have been absent or unavailable. The college faculty and staff is a

rich community resource. The library, laboratories and other specialized facilities provide resources not previously available in the community.

There are two final and general points to be made regarding the place and function of the regional community colleges in Massachusetts. The first of these concerns the relationship with private higher education, especially independent junior colleges. Private higher education, particularly in New England, has always served and today more than ever serves many important functions. Because of their many important contributions to education in the past and the prospect of continued contributions possible only through the independent college, these institutions should be supported, protected and encouraged. The public regional community college does not compete with, supplant, or replace the private or independent college; it supplements existing educational services.

The second point concerns accreditation. Much has been said herein about quality, about institutional integrity and academic status and self-respect. These are all intangibles which defy precise definition and objective measure. The presence or absence of these characteristics determines whether the community college is a viable social institution capable of fulfilling its functions. About the only outward manifestation of the existence in sufficient substance of these internal characteristics is membership (accreditation) in the regional association. Accreditation is a voluntary effort; it comes after institutional self-evaluation. It is a judgment of peers brought in by invitation to examine and evaluate the college; it is an exercise in mutual improvement conducted at the highest professional and academic levels. Accreditation is a stamp of approval signifying to the public and to the college's clientele that its standards and qualities are such as to warrant the college a place in the family of higher education. Accreditation may not be sought until the college has had time to prove itself; but having fulfilled the criterion of time, the community college should seek this approbation without delay.

These then are the purposes and functions of the community college in Massachusetts. Ambitious goals they are and perhaps idealistic. Not all community colleges will fulfill them equally well in every respect; but high quality and success cannot be achieved without first defining high goals.

OCCUPATIONAL EDUCATION

Its Importance

Since World War II there has been a constant and increasingly urgent stream of studies and reports which have stressed two ideas: the present and impending shortage of all categories of trained, skilled manpower and the changing "mix" of manpower components in our economy. The total employment pattern has changed markedly in two ways since the war. Each of these changes is expected to continue and accentuate in the decade from the mid-60's to the mid-70's. The first is an accelerating shift from less-skilled to more-skilled jobs. The second is from "goods-producing" to "service-producing" employment. Two conclusions may be drawn:

1. *All* jobs will require more education and training, thus implying a higher *level* of education.
2. Jobs, and the education and training required, will change rapidly. To be adaptable and flexible to meet tomorrow's changing job demands implies that today's education must be as broadly based as possible. It must be broad in basic learnings and knowledges which can be applied to changing skill demands.

Employment trends established since World War II are expected to continue or accelerate in the next decade or so. Employment in service industries will grow 50 per cent. Similarly employment in government will increase 50 per cent, particularly at state and local levels—firemen, police, teachers, health service personnel at the professional, technical, and clerical support levels in these areas. Professional, technical and kindred occupations and service workers are expected to increase 40 per cent by 1975. Clerical workers will increase 33 per cent. These increases are measured against an increase of about 16 per cent in population and 25 per cent in jobs in the same period.

Against these facts is arrayed the greatest problem the community college has in this field—the low prestige of occupational education. Thus far in its brief history the community college, while acknowledging its function and responsibility in occupational education, has failed to pursue this objective as aggressively as it has others.

All groups are agreed, including parents, that the community college *ought* to offer a wide variety of occupational programs. However, these are always for "other people's kids; my own are going to ————; or to medical school or law school". This universal recognition of the necessity for occupational education coupled with the inconsistent reluctance to consider it for one's own children is almost entirely a matter of prestige. It is difficult for parents to confess to neighbors, to professional associates, or to social acquaintances that one's son is learning to be an electronics technician; it is so much more prestigious to announce that "my son is studying electrical engineering". Until social attitudes can be changed regarding occupational education it is not likely that the community college, even though dedicated to its responsibility in this field, will be able satisfactorily to fulfill this function.

There is another common fallacy regarding occupational education which is related to this matter of prestige. Whenever a shortage in skilled manpower is identified, either long- or short-range, the usual panacea is thought to be to "offer a program". To "offer a program" seems to presume therefrom an instant flow of trained manpower, thus automatically ending the critical shortage. Certainly manpower cannot be trained without a training program. But it takes more than a program—there must be students in it. To recruit students into an occupational program requires that it offer something in addition to education or training; some incentive is necessary which will make the occupation an attractive choice. Naturally student interest and aptitude are factors, but seemingly more influential are intangibles such as prestige, glamour, or the prospects of better-than-average earnings.

The Vocational Education Act of 1963

The eighty-eighth Congress passed the Vocational Education Act of 1963 which substantially liberalized and re-defined the older concepts of vocational education. It was a clear demonstration of Congressional vision and wisdom. With Congressional leadership it established modern goals and objectives for vocational education far in advance of the context of the *status quo* maintained by much of the country's professional vocational education leadership. Most noteworthy was the clear Congressional intent to include community colleges within the scope and purview of Federally reimbursed vocational education.

All Federal vocational education legislation is administered through individual state plans which must be approved by the U.S. Commissioner of Education. The new Act continues this legislative policy and requires that all state plans are to be rewritten so as to introduce the modern concepts of the Act into each state's vocational education programs which are to qualify for Federal reimbursement. The revised Massachusetts plan meets the minimum provisions of the Act; otherwise it would not have been approved by the U.S. Office of Education. But the plan seems largely to ignore the community college as an important agency for the development of occupational education; rather, it seems to expect that the development needed in the state, and for which Federal funds are provided, will come largely through expansion of vocational education on the high school level, mainly in the area vocational schools. The plan shows little imagination of the type needed for occupational education in a nuclear age.

The philosophy of vocational education as reflected in the Massachusetts state plan appears to be more largely the retention of the *status quo* than that of boldly venturing into new fields. It indicates the need for expansion of occupational education through area vocational schools on the secondary level—perpetuating the separation of vocational students from their contemporaries who remain in academic high schools, even though many of the students in the high schools may need occupational education just as badly as those accepted in the vocational schools. The plan emphasizes the continuance of vocational education largely on the high school level in spite of evidence nationally that it is rapidly moving toward the post-high school years. It recognizes the community college in a perfunctory way and only where its mention could not be avoided to comply with Federal regulations—but apparently relegates it to a second-rate position with respect to its potential contribution to occupational education.

The emphasis in the plan is on schools devoted entirely to vocational education—separate schools apart from comprehensive high schools and community colleges. This is in contrast with the recommendations of many leaders who believe that occupational education for the years ahead should increasingly be provided in comprehensive institutions on both the high school and the post-high school level.

It would appear to be logical and sensible to have spelled out in the state plan much more clearly than it is at present the part the community colleges should play in the occupational education program of the future. There is nothing in the present plan which *precludes* developments within the Commonwealth which are commensurate with its needs. These developments can take place if leaders desire it and work toward implementing it. Perhaps the most urgently needed element in the total picture is the *will* to make the changes.

Conclusions and Recommendations

These are some of the conclusions concerning the development of occupational education in Massachusetts community colleges:

1. Meeting the occupational needs of the Commonwealth through educational programs which properly belong in the community colleges will require a wide range of curriculums covering a wide occupational spectrum.

2. These curriculums will require that a substantial proportion of the learning takes place through the use of physical equipment other than books, such as shops and laboratories.

3. A state-wide master plan is needed for the development and allocation of vocational and occupational curriculum offerings throughout the state at various levels and under several different jurisdictions.

4. The curriculum offerings of the state-wide community college system should reflect the occupational needs of the Commonwealth and of the placement market adjacent thereto.

5. Close cooperation will be desirable between the community colleges and their "feeder" high schools in setting up admission standards, in keeping high school counselors informed concerning community college offerings, and in assisting the high schools to develop "tracks" or core curriculums for students who will undertake occupational curriculums in the community colleges.

6. The community colleges will need to keep in close touch with other emerging developments in the field of vocational education, especially those of area vocational schools.

7. Present legislation (Section 26, Chapter 572, Acts of 1965) permits the award of the Associate in Applied Science degree to graduates of curriculums operated in vocational schools. This legal possibility, even though remote, could dilute the standing and dignity of the Associate degree. It is recommended that the State Board of Education and the Board of Higher Education undertake a serious study and complete review of this policy in the light of national practices. One solution might be to amend Section 26 so as to remove the clause authorizing the degree of Associate in Applied Science and to transfer this authority to the Board of Regional Community Colleges.

8. Qualifications for teachers of subjects peculiar to the occupational curriculums need to be studied carefully and developed in such a way that occupational competency as well as academic competency will be assured.

9. Massachusetts should take steps to provide appropriate pre-employment teacher education in the several occupational fields as well as professional improvement programs on an in-service basis.

10. Physical plant and equipment utilized for occupational instruction must reflect current practices in business, industry and other areas of gainful employment for which students are being trained.

11. Research and development services are as important to occupational education in community colleges as they are to business and industry.

12. The services of advisory committees should be utilized in the planning and implementation of the occupational education programs in the community colleges.

13. Close working relationships should be developed between the Board of Regional Community Colleges and the Division of Employment Security.

14. Close working relationships are needed between the Board of Regional Community Colleges and the Bureau of Vocational Education.

15. Procedures for the evaluation of results of the occupational programs should be incorporated in the overall planning.

16. If full use is to be made of available Federal funds for vocational education, matching funds must be appropriated by the state.

THE 1965 STATUS OF COMMUNITY COLLEGES

Policies Governing their Establishment and Facilities

Under an initial Board policy, colleges were to be established in temporary facilities (temporary being defined as five to seven years); sites and permanent facilities were to be planned and funded later. Effective with the two new colleges established in the fall of 1966, this policy was modified to the extent that new colleges were to be initiated in new facilities to be built quickly to SCSD specifications (School Construction Systems Development) and expanded in relatively small increments as the colleges grew. Although the *policy* was changed, the net practical effect was unchanged: both colleges established under the new policy (Bristol and Massasoit) started in temporary facilities, as did the nine colleges established under the original policy.

The old policy and the new policy as it has thus far developed have had certain advantages:

1. Community college services have been made available to a large segment of the people of the Commonwealth very quickly. In the brief span of five years eight colleges were brought into being and in 1964-65 served an enrollment of 7,600 full-time equivalent students. An additional college was established (North Shore) in the fall of 1965 and two more opened in the fall of 1966 (Massasoit and Bristol).

2. The capital investment per student in temporary plant has been minimal and can be amortized over the interim between the opening of the college and occupancy of a new permanent campus.

3. It has permitted *empirical* planning of permanent facilities instead of *hypothetical* planning. With the college in operation during the planning period, it is possible to plan from *known* data about the student body, the service area and curriculum needs rather than from statistics, projections, and guesses (even though "educated") about these important factors.

But there are offsetting disadvantages in this policy which are now evident:

1. While facilities have been provided and the renovations have been excellent, the fact remains that the college plants are very old and in most cases unattractive, especially in contrast to the new and attractive high schools from which many of the students come. This prejudices the image of the local community college in the eyes of the general public, parents and students. Regardless of the excellence of education which goes on inside the plant, it is impossible fully to communicate this excellence unless it is reflected in the quality of the facilities.

2. While no plant is *completely* inadequate, on the other hand none of the plants is entirely adequate to permit the college to fulfill its function. Each plant may have some facilities which are outstanding, but each also lacks entirely or is conspicuously inadequate in some necessary feature. To generalize, in most of the colleges the libraries are substandard both as to the size of the collection of instructional materials and as to student seating. Student service areas including lounges, study areas, food service and bookstores, are for the most part unsatisfactory, yet in a commuting college, in contrast with a residential college, nothing is more important than these facilities.

3. The temporary nature of the facilities and the usually heavy investment in specialized instructional space and equipment required for occupational curriculums has inhibited the development of these programs which are a unique part of the community college "mission".

4. Almost without exception, the renovations, whether of space or equipment, have not been ready on schedule. Many intangibles affect this, of course, but the fact remains that a new institution has significantly larger handicaps if it does not have access to its plant as scheduled. At least three of the eight colleges have had complete moves from "temporary" to other "temporary" accommodations (Massachusetts Bay, Quinsigamond and Holyoke). Others have had to conduct parts of their program in borrowed or rented facilities until the "temporary" plant was ready for occupancy. While these problems have been met by administrative and instructional imagination and resourcefulness, the fact remains that it has been a "make do" situation which has often diverted energies from more important problems of new institutions.

5. An old plant, even though renovated, is expensive to operate and maintain.

6. An old plant, even though renovated, is not planned for the purpose it is to serve, and to this extent cramps the full development of the college purpose and potential.

7. Most of the temporary plants are too small to accommodate the potential enrollment. They are too small to permit the development of comprehensive programs. Thus, the colleges have had to restrict enrollment to the number of students which the facilities could accommodate. This results in a violation of the philosophical "open door" concept to which the community college is dedicated.

8. Space limitations have restricted curricular offerings and thus prevented the colleges from fulfilling their mission to provide a comprehensive program. Also restricted have been the occupational curriculums which would make a total program more comprehensive, and in turn better serve more students from the region.

9. In a temporary plant specialized facilities are almost always inadequate to one degree or another. Every college is lacking in some specialized facilities (even though the nature of the original plant may have permitted one or another type to be provided adequately). Examples are: libraries, faculty offices, laboratories and/or shops, auditoriums, student centers, food service, gymnasia, etc. Some colleges are even lacking in ordinary classrooms.

On balance, the policy of initiating new colleges in old plants has probably restricted the full development of the community college potential in its region or has made it difficult or impossible to attain a desirable level of quality. Although the matter of plant is a capital item, the adequacy or inadequacy of the plant is reflected in operating costs:

1. Old plant is costly to maintain and operate; operating funds have to be diverted from an educational purpose to maintain and operate the plant.

2. To the extent old plant (capital) prevents the college from fulfilling its purpose, per student costs (operating) may be held down. Example: unlimited library funds are of no use if there is not adequate space to service or stack the collection or for student use of the books. (This may be the reason why the library appropriations have been inadequate.)

The final *Report* of the Willis Commission puts the matter this way (p. 106):

> The regional community colleges have benefitted from strong leadership. By design these institutions were willing to get started with meager initial resources both to speed their initiation and to permit an initial development of programs prior to the design of buildings to serve the needs of the programs. These limited facilities have served more as a challenge than as a deterrent to the directors (presidents). *Such a challenge, if it long persists, could wear thin.* (Emphasis added).

Libraries

One very significant shortcoming of the community college plants is the library, both as to the size of the book collection and as to student seating capacity. The minimum collection, according to the American Library Association, should be 20,000 volumes. While this figure may be somewhat high, particularly for new colleges and those with enrollments of under 500, it certainly is not an exorbitant standard for colleges of over 500. Also, such a level should be reached very quickly after the college is established. To delay the accumulation of a satisfactory collection simply denies adequate library services to whole generations of community college students—since a "generation" in this case is only two years. Several of the older colleges are approaching 10,000 volumes; these are among the larger colleges, yet their collections are less than half the minimum number. The current level of the Commonwealth's appropriation simply will not permit the acquisition of library materials at a satisfactory rate; the present appropriation of $100,000[1] for all the colleges should be at least doubled and preferably trebled. In addition, there should be an initial appropriation for each new college of $50,000 instead of the present allotment of $25,000.

As to seating, the library should provide for 25-30 per cent of the student body. In a residential college, library seating is probably satisfactory at the lower end of this range; in that case, students have on-campus dormitory rooms where they can study. In a commuting college, the library seating need is at the upper limits of the suggested range, since usually students have no place but the library for on-campus study. It is wise also to have needed additional study areas distributed conveniently throughout the campus.

Table 1. Comparison of Library and Auditorium Capacities, 1964-65.

College	Full-time Enrollment	Library Capacity	Library % of Student Body	Auditorium Capacity	Auditorium % of Student Body
Berkshire	498	85	17.1	540	108.4
Mass. Bay	845	100	11.8	400	47.3
Cape Cod	446	48	10.8	325	72.9
Northern Essex	518	84	16.2	245	47.3
Greenfield	296	38	12.8	250	84.5
Quinsigamond	552	128	23.2	165	29.9
Holyoke	652	50	7.7	1,000	153.4
Mt. Wachusett	219	70	32.0	200	91.3

A glance at the accompanying table will give a quick summary of the seating adequacy of community college libraries, and a comparison with auditorium seating. While auditoriums are important facilities, it is not expected that they provide seating capacity for the entire student body (indeed they cannot do so for long with the current rate of growth) even though the primary function of the auditorium is as an instructional lecture hall. Naturally, a good-sized auditorium is an asset to the college as a community service facility, but it is scarcely worth the capital investment for this purpose alone. The funds would be much better utilized in providing adequate libraries.

Staffing

Staffing of community colleges is governed by certain budgetary regulations imposed by the legislature:

1. Only two administrative positions are authorized: a president and an assistant to the president.[2]
2. All other professional positions, including such administrative and/or non-instructional services as deans and directors, librarians, counselors and guidance officers, business managers, admissions officers and registrars, as well as teachers, are authorized as instructional positions at a ratio of 18:1 of projected full-time enrollment. In short, if the college is to have librarians and counselors and administrative services other than a president and his assistant, these positions must be "diverted" from instructional (classroom teaching) positions.

Practically, the 18:1 ratio resembles the high school more closely than college practice. If budgeting must be done on this basis, the highest ratio consistent with quality education is sixteen students to each instructor. In the interest of getting a new system started off on a proper foundation of quality a more realistic ratio is 15:1 or even 14:1. The Commonwealth has already acknowledged the inadequacy of the 18:1 ratio: nursing curriculums in community colleges are staffed at 10:1 and technical curriculums (of which there are many in community colleges) have been staffed at 13:1 for several years in the state's two four-year technical institutes.

But the situation is even worse than the 18:1 ratio would indicate, since it is not confined to instructors. To provide the absolute essentials of administrative and non-instructional services, teaching positions have had to be diverted. The impact is two-fold and bad:

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[1] For FY '68 the appropriation for this purpose has been increased to $150,000.

[2] In the Supplemental Budget for FY '67 a librarian and one or more deans, depending on college size, were authorized as administrative positions for each college. Since these were authorized in a supplemental budget and since they were designated as "02" positions (temporary) instead of "01" positions (permanent) it is not known whether this represents a change in budget policy.

1. The actual classroom ratio rises from the budgeted 18:1 to something above it. The average class size (a function of student-faculty ratio but not to be confused with it) per college in academic 1964-65 ranged between 21:9 (Greenfield) and 30:9 (Mt. Wachusett). The state-wide average of all college averages was 26:2, but the *median* of all college averages was 27:5.
2. The instructional salaries which a college can afford to divert are simply inadequate to recruit personnel with requisite specialized training. The early years of a college is the time when the *strongest* (and most expensive) staff is needed to establish initial policies, practices, procedures and precedents for the college. If these are not done properly *at the outset* the damage to quality is likely to be permanent. For example, the diversion of a fine English teacher to act as a part-time librarian will almost certainly result in a weak library. The reverse is also true: to employ a well-trained librarian only to be diverted to part-time instruction is to weaken both instruction and the library. Similarly, a good counselor is not likely to be an adequate psychology teacher and *vice versa.*

Faculties

In spite of the less-than-ideal working conditions in the temporary facilities described, and a salary schedule which is rapidly becoming non-competitive, the community colleges have assembled extraordinarily strong faculties, both full- and part-time. Except in one category (number of doctor's degrees) the combined faculties are outstanding as community college faculties and equal in all criteria of excellence to those in most four-year colleges. Ninety-three per cent have advanced degrees and 100 per cent have bachelor's degrees or higher. Fully 20 per cent of all faculty not already possessing a Ph.D. at the time studied were actively working toward their next higher degree.

An interesting note is that all of the faculty analyzed had at least a bachelor's degree. It is not unusual in community colleges to find a low percentage of faculty members without degrees. The waiver of the usual degree requirement is reasonable since in many specialized fields, especially in occupational technologies, colleges do not grant degrees; also it is not unusual in some fields such as art and music to find that professional and artistic competency has been earned by private study.

The statistics reveal other characteristics that bespeak faculty excellence: 80 per cent have had previous *college* teaching experience, including 28 per cent whose previous experience has been in junior or community colleges (an unusually high figure); 91 per cent have had some previous teaching experience at one level or another. Twenty-five per cent of the faculty members earned academic honors as part of their professional preparation. Another very significant fact is that 88 per cent held degrees which were appropriate to the academic disciplines in which they were teaching. Eighty-two per cent have had career experience other than teaching: 20 per cent in business and management, 10 per cent in research, 5 per cent in engineering and 4 per cent in government.

Admissions and Enrollments

Analysis of survey data revealed interesting information regarding enrollment, attrition and retention of students and academic policies governing these aspects of the colleges.

Since the first community college was established in the fall of 1960, the growth to a total enrollment of 7,600 students in the system in a five-year period testifies to the urgent need in the Commonwealth for educational services of the community college type and level. Obviously, this growth is a result of the growth of each *institution* and of the *number* of institutions. One can only conjecture as to what *might have been* the growth of the community college system had not the colleges been hampered by delays in renovation schedules, by inadequacies of temporary plant and facilities (as these affect both gross capacity and curriculum development) and by insufficient staffing (imposed by budgetary policies over which the Board had no control).

Study of the data regarding the "admissions sequence" from application to enrollment revealed interesting facts. First to be noted is the astounding increase in the number of applications in 3 years: 218 per cent. Part of this increase is accounted for by the establishment of three new colleges within the period 1963-65. The increase which these new colleges contributed to the total increase is ample testimony to the urgent need of community college services in those areas of the Commonwealth as yet unserved. But even if the new colleges are excluded, the increase of applications is still 122 per cent.

Some of the applicants, however, are not "qualified" for admission, even though the colleges presume to operate on an "open door" policy. Each college defines "qualified" according to its own standards and judgments as to the capabilities and academic record necessary for success in the community college or in the particular curriculum which the applicant has selected. It is quite evident from the data that in general if an applicant is "qualified" he is also "notified" (that is, admitted). Thus, it follows that "qualified" is redefined by the college from year to year to adjust the number of applications to the number who can be "notified" (admitted); and the number that can be admitted depends upon the availability of student spaces and curriculum. The limitations of space, facilities, staff and curriculum by which the colleges have been handicapped has prevented them from really extending the "open door" opportunity to all who sought it. It would seem that for many applicants the door to post-high school education is "opened" only by the traditional four-year liberal arts keys: College Boards, college preparatory high school diploma, "adequate scores", "potential", and a prognosis of success.

Another point to be noted is the loss between those applicants who are admitted and those who ultimately enroll. This loss ranges between 12 per cent (Quinsigamond, '63) and 33 per cent (Northern Essex and Holyoke, '65). On a system-wide basis the loss ranges from 15 per cent ('63) to nearly 30 per cent ('65). Taking into account the inevitable and legitimate changes of plans among students and their families, unanticipated financial handicaps which dictate decisions to go to work rather than go to college, illness, family moves from the community, etc., the percentage loss seems higher than it ought to be. Another factor accounting for this loss is the problem of multiple applications and the choice by the applicant of a four-year college, if he can be admitted, in preference to the community college. The compounded effect of the shortage of college "student spaces" and the increasing social and economic motivations to attend college has encouraged the hedging technique of multiple applications. A further disturbing phenomenon is that the rate of loss between admission and enrollment has been consistently increasing, at least as appears from this three-year study: on a system-wide basis, 15.3 per cent loss in '63, 24.3 per cent in '64 and 28.9 per cent in '65.

Taking the data as a whole, it appears that typically between the fall and spring semesters there is about a 20 per cent attrition of those who enroll in the first but do not enroll in the second semester. Typically the spring registration is about 15 per cent smaller than the fall semester. The main reason for dropping out between semesters (about 60 per cent) seems to be academic suspension. About 25 per cent of the drop-outs seem to be for economic reasons and about 10 per cent for personal reasons.

Other facts concerning the current status of community colleges:

1. About 35 per cent of the enrollment is in liberal arts and an additional 25 per cent in "general," which is likely to be a terminal (non-transfer) liberal art curriculum.
2. The division of enrollment between transfer and terminal curriculums is 44 per cent in the former and 56 per cent in the latter.
3. The total enrollment is about two-thirds freshmen and one-third sophomores, which is typical of junior and community colleges generally.
4. Of the 1,277 degrees which have been awarded through 1965, 45 per cent have been in liberal arts, 16 per cent in the general curriculum, 15 per cent in secretarial, 8 per cent in business management and 5 per cent in electronics; the remaining 11 per cent have been scattered among six other curriculums.
5. Community colleges have transferred students to 104 senior institutions. Many of these have gone to the University of Massachusetts, which has established a most receptive and hospitable policy toward community college graduates. After the University, the state colleges, have received the largest number of community college graduates in spite of the fact that transfer relationships have not always been easy to arrange. Northeastern University, Boston University and Suffolk

University have been the principal private institutions receiving community college graduates.

Placement of Graduates

The colleges report similar success with placement of graduates of occupational curriculums. Testifying to the need for this kind and level of education as well as to the excellence of the curriculums designed for technician jobs, every college reports "100 per cent placement" of occupational graduates, after deducting those who elect to continue their education, enter the military or otherwise postpone entry into the labor market. Another important note is that occupational graduates are placed in jobs which are in the field of their training and at the level for which the curriculum was designed.

Some occupational graduates are continuing their education on a full-time basis. Although the community college occupational curriculum is not designed for transfer to senior colleges, the fact that some graduates do continue their education through transfer is commendable. It indicates that the quality of content and instruction is truly higher education in level. It further indicates that the college is fulfilling its "screening" function in identifying and encouraging those students who should continue rather than stop short of their educational potential.

Many other occupational graduates are continuing their education on a part-time basis. This suggests that the community colleges are motivating their students toward education as a continuing process. To continue education on a part-time basis assumes, of course, that the student lives in a metropolitan community where educational opportunities are available in the evenings and on Saturday. Unfortunately, these educational services are not as readily available in more rural communities.

Operating Costs

The per student cost in 1966-67 for the state as a whole was $635.01, of which the Commonwealth provided $435.01 and the student himself paid $200 as tuition. Note that Central Office costs and "seed money" (defined as operating funds spent before the college opened for classes) are *excluded* from these figures; "special capital outlay" for equipment and library is *included.* Costs ranged from a low of $512.03 (Northern Essex) to a high of $881.37 (Massasoit). Such divergences are to be expected since costs depend upon such variables as the cost of plant operation including rentals, the nature of the college program, the size of the enrollment and the costs of instruction in terms of faculty salaries (an "old" faculty will have earned higher steps on the salary schedule than a "young" faculty). The differences of costs cannot be accounted for solely on these bases, however. Much of the disparity is found in different rates of budget support. The ratio between the highest and lowest cost per student is 172.13 per cent; if the students' contribution is subtracted ($200 per student) leaving only the state's support, the ratio is more disparate: 218.36 per cent.

The amount of state support is grossly inadequate. In these days of inflation the minimum cost per student should be nearer $900 (of which the state's share would be $700). Many states are now supporting their community colleges at the $900 level or higher.

If eight states (Arizona, California, Colorado, Florida, Illinois, Maryland, New York, and *including* Massachusetts) can be sufficiently representative to be called a "national average", the calculated average based on the state's average, weighted by the number of institutions in operation, results as follows:

1963-64 — $662.54
1964-65 — 600.65
Weighted 2-year average — 639.36

The question now emerges, is the mere attainment of the "national" average adequate to permit the community colleges of Massachusetts to function at the level of quality expected of them? The answer to this question is quite clearly, No. There are two major reasons why "national" or state-wide comparisons are an insufficient background against which to measure the adequacy of the Commonwealth's effort.

1. Massachusetts community colleges are a new system (1960); other states used as basis of comparison have older systems, or at least have older individual components in a new system which would tend to lower state-wide per student costs.
2. Certain Massachusetts policies, whether established by the Board of Regional Community Colleges or imposed by other state

agencies, have been inimical to the fullest development and highest quality in the community colleges.

In 1964-65 the oldest College (Berkshire) was *five* years old; of the rest, three were four years old, one was three years old, one was two years old and two were in their first year of operation.

Relatively, all the colleges are very small. In 1963-64, enrollment range was 220-705, average 434; in 1964-65, the range was 219-845, average 503; in 1965-66, the range was 423-1,210, average 664; in 1966-67, the range was 321-1,222, average 795. These are very small colleges by any standard of measurement.

The significance of this is twofold:

1. Start-up and development costs in the early years of a new college are (or are normally expected to be) very high relative to the operating costs of a mature, well-developed institution.

2. The per student costs in a small institution are higher than in one which has reached optimum size.

For these reasons per student operating costs in Massachusetts should be expected to exceed any kind of average cost by substantial margins.

While it is not an absolute rule that the early years of a college are high cost years, it is a sound generalization. In the early years expenditures for equipment and library and administrative costs are expected to be heavy since to offer a fully comprehensive program from the beginning requires administrative and instructional services equal to a fully developed college. To the extent that these are lacking, the first generations of students are denied educational quality. To offer a quality program in the early years of a college requires that laboratories and shops be fully equipped, library facilities be adequate, all courses in the published curriculum be offered, guidance, counseling and student personnel services be fully staffed and functioning, etc., just as in the mature years. All this is accomplished only at a high per student cost. In any institution there is an irreducible core of administrative and instructional services. Administrative and clerical functions must be performed regardless of size; plant must be maintained, courses taught even if sections are not full, the library staffed, etc. If a quality program is to be provided, the costs per student in a small college will obviously be higher than in a larger college. Massachusetts community colleges are small!

The point of these arguments is obvious: if the Commonwealth of Massachusetts is to have a system of high quality community colleges to serve the youth of the state, it will cost money. It is not sufficient to bring the expenditure per student up to some kind of "national" average. A figure of $900 per student in these days is certainly not excessive. Some states already base appropriations for their community college systems on this figure (Maryland, for instance) and others, (New York) spend substantially more than this—$1,000-$1,100 per student for new, rapidly growing colleges and even more if there is a heavy proportion of occupational education in the curriculum.

Naturally, no one would admit to a goal of less than top quality colleges. Certainly a college cannot achieve a high level of quality without adequate financial support. But a word of caution is in order—money itself does not produce or guarantee quality. It only makes quality possible. Given adequate support, the responsibility for quality lies with the professional staff of the colleges.

Through FY '65 the Commonwealth had appropriated $5,950,754 and spent $3,133,961 by way of capital investment in the community college program. Some of the unexpended appropriations are from recent (FY '64 and '65) appropriations to construct permanent campuses. Excluding the appropriation for this Master Plan study and for the construction of permanent campuses, the Commonwealth has appropriated $4,192,154 for the "start-up" cost of *nine* community colleges, including the renovation of their temporary facilities, their equipment and library collections. For a state that expects quality in education, this is an extraordinarily low capital investment per student!

CURRICULUM

Common to all of the community colleges are transfer liberal arts and pre-business administration curriculums. A number of reasons account for this:

1. These are the curriculums most often requested by applicants.
2. They are the least expensive to offer in terms of space, equipment and specialized instructional facilities.
3. They are the easiest to offer since they are already familiar to students, parents, high school guidance officers and faculties of the colleges.

Liberal Arts

Liberal arts is basic to most upper division academic majors. It is also a frequent preadmission prerequisite to professional objectives and professional schools of universities. Thus, two years of liberal arts is the most useful of community college offering since it is elected as necessary for the academic objectives of a very large proportion of community college students whose career choices or professional ambitions require a minimum of a baccalaureate degree. Even if students in liberal arts do not continue into the upper division, their two years in community college have been beneficial in the way college education is supposed to be beneficial: broadening of background and freeing the mind for a richer personal life and for improved effectiveness as citizen, consumer, family member and social being.

In Massachusetts the transfer relationships between the community colleges and the State University are excellent, largely because the administrative leadership of the University has taken the initiative in recognizing the role and function of the community colleges and articulating these with those of the University. In general, the same comment applies to private colleges and universities. Transfer problems so far seem to have been most acute with the state colleges and the technological institutes. Because of the growing flow of community college graduates who will wish to transfer to senior institutions, it is urgent that transfer procedures be systemized and made routine as early as possible, especially with public institutions.

Occupational Education

On the occupational side of the community college curriculum the colleges of the Commonwealth have been most severely restricted by limitations of space, facilities, equipment and staff. All colleges now offer some occupational curriculums but these understandably are likely to be in "non-equipment" fields, such as secretarial and business management in its various sub-divisions—accounting, retail merchandising, etc. These are occupational fields which require a minimum of equipment and specialized instructional facilities and for the most part can be taught in space and by faculty which are used in other fields. Also, most colleges offer a general technical occupational curriculum either alone or in combination with other transfer or occupational objectives which will satisfy the educational needs of the region and can be provided within the college's limitations of space, staff and equipment.

Each of the colleges is well advanced with plans for more adequate occupational education services which will be inaugurated whenever the physical requirements of the programs can be met. Each of these programs is well-reasoned and appropriate to the comprehensive community college curriculum.

There is likely to be a core of occupational curriculums common to most colleges. These will be aimed at occupations which are so universal that they are common to all or most business, industry and government categories; the education is applicable and "saleable" whether inside the community college region or state-wide or nationally. These curriculums have broad student appeal. Finally, they are generally low-cost, "non-equipment" curriculums, not requiring too much in the way of specialized faculty and instructional facilities or equipment.

To be specific, every college will need curriculums in secretarial science since the skills learned therein are universally applicable and in continuous, urgent and increasing demand despite the inroads of automation. Another need is a non-transfer curriculum in general business management. In the intensifying demand for health services encouraged by new knowledge, new concepts of health standards and the ability to pay for additional services, plus Federal and state programs for those who cannot pay, the need for RN nurses and dental assistants and similar health-related specialists is limitless. The principal restraint upon the addition of these curriculums to all college programs is the inadequacy in quantity and quality of clinical facilities in the community and their availability to assist in education for these occupations. On the technical side, comparable to general business management, is a curriculum in general engineering technology. Such a curriculum could have specialized second-year options in mechanical or electrical after a common core freshman year.

Finally, there is another curriculum which is rapidly achieving the stature of universality in its relation to the accelerating trend toward automation: data processing. Much of this curriculum can be basic; it does not need to be sophisticated to the extent of specific applications. It can even be taught without an elaborate "hardware" installation, although this is likely to result in a level of training below desired objectives. Data processing as a curriculum common to all or most colleges is practical if the equipment problem can be solved. There are a number of approaches which can minimize the problem. It would be impractical to recommend such a curriculum in all colleges if it required a complete and self-sufficient installation in each college. But there are ways of planning access to equipment in business, industry or government already in the community just as local hospitals and dentists' offices are used as clinical facilities in health-related curriculums. Another possibility not too visionary is that there could be a state-wide computer and data processing installation with which the college could tie-in with a minimum low-cost compatible component installation of its own.

Community colleges in the city of Boston and the surrounding suburban areas will find their curriculum "mix" dictated not only by local community needs but by the needs of the total metropolitan area since these regions are commuter-oriented toward employment in the city. And obviously the city and its environs, roughly defined as inside the peripheral route 128, can absorb more community college graduates than the urban colleges can supply. Some of the curriculums which would seem to be worthy of consideration in a suburban college, even though perhaps not justified on a community (regional) basis, would be those in the banking, real estate, insurance and finance fields; those directly related to government employment at various levels; and those related to service trades industries, such as commercial art, fashion design, medical illustration and advertising.

Continuing Education.

Service to the community in terms of evening, part-time and short courses is a major responsibility of the community college. It is in this category that the real flexibility and adaptability of the college to the myriad and ever-changing educational needs of the community (region) are tested. The modern economy and technology is moving and changing so rapidly that education must be a continuous process. In a working career lifetime, now and in the future, a person will change jobs several times and may even change careers as often as four or five times. Each of these changes is likely to require new training, retraining or refreshing. Many agencies, from the local to the Federal levels, will be involved with this problem. It will be the responsibility of the community college to keep abreast of the needs and of the part which each agency is playing in accommodating to these needs, and to identify its own role of service within the total complex. Co-operation with other agencies will be imperative; MDTA and the Economic Opportunity programs are only two examples. The means of meeting needs will require new and imaginative thinking unfettered by tradition. Lectures, seminars, symposia, short courses, offered on-campus and off-campus at any time of day or day of the week, are but a brief list of the means of meeting the problems.

PROJECTED ENROLLMENTS AND PRIORITIES

One of the problems of master planning for the future of an organization or system already partially in being is the point or period of time *as of* which to make the measurements and to project the plan. It would be easy if it could be assumed that everything which had gone on prior to the selected point of time was fixed and firm and that which was to come was subject to planning and completely without prejudgments or commitments. In the case of the regional community colleges neither of these assumptions is true since the system is partially in being and going forward. For purposes of this study, the dates arbitrarily selected as points of time were June 30, 1965, and/or the academic or fiscal period 1964-65 ending on this date. As of that time there were eight community colleges which had already been operating from one to five years:

Berkshire (Pittsfield)	1960
Massachusetts Bay (Boston)	1961
Cape Cod (Hyannis)	1961
Northern Essex (Haverhill)	1961
Greenfield	1962
Quinsigamond (Worcester)	1963
Holyoke*	1964
Mount Wachusett (Gardner)	1964

* Had been operated as a municipal junior college since 1946; entered the state Community College system in 1964.

One additional college was planned to open in the fall of 1965 (North Shore, at Beverly); and *during the period* of this Master Plan study two more colleges were committed by the Board of Regional Community Colleges and planned to open in the fall of 1966 (Bristol, at Fall River and Massasoit, at Brockton). Bristol was planned in the original Master Plan (1958) as "Southeast Massachusetts"; Massasoit was to be recommended in the new Master Plan as "South Suburban."

Criteria for Definition of Regions

By definition, the working unit for this study had to be a "region" since by statute the community colleges are *regional* colleges. There being no means of projecting educational "regions" by statistical or other scientific methods, empirical judgments were used to define and allocate regions. The validity of the selection was then tested by statistical and other data. The criteria used to define the regions were:

1. Enough regions (colleges) to place community college services within reach of 95 per cent of the population.
2. As few regions as possible in order to minimize capital and operating costs and to assure institutions large enough to be economically truly comprehensive in their programs. The criteria of "large enough" were defined as:
   a. A potential initial (freshmen only) enrollment of at least 300 students
   b. A potential enrollment of 750 students after two years of operation and of 2,000 after 10 years
   c. A potential upper limit of enrollment of 5,000 except in urban Boston where the upper limit would be 7,500
   d. Commuting time not to exceed 45 minutes or 30 miles

The use of the concept of the region is necessary but very limited. It is necessary only for the statutory reason that the Governor, in appointing the advisory boards of regional community colleges must select members who are ". . . residents of the region served by the college". (Sec. 38, Ch. 737 Acts of 1964). The only other practical use of the region is to provide a unit for statistical manipulation in this study and to make certain that the entire State is "covered" by assigning each of the 351 cities and towns to a region.

In this connection it is important to note a policy adopted by the Board of Regional Community Colleges to the effect that *any* resident may attend *any* of its community colleges. Such a policy is necessary since the curricular offerings will differ from college to college and a student desiring a curriculum not offered by the college in his region may travel to a college in another region which offers the program of his choice. Further, for personal reasons of many sorts it might be more convenient, especially in the metropolitan region, for a student to attend a community college other than the one in the "region" of his residence. For example, it probably would be of equal convenience for a resident of Brookline to attend Massachusetts Bay, West Suburban, Northwest Suburban or Southeast Suburban as well as Southwest Boston, the "region" which includes Brookline.

Thus, it should be noted with particular emphasis that the definition of regions and the boundaries of regions for community college purposes has none of the significance of elementary or secondary school *districts*. The two concepts of "regions" and "districts" are not comparable in any way.

An additional complicating factor in the defining of regions is the fact that eight colleges were already in operation and had established service areas of their own. In the western part of the Commonwealth where population is more sparse and the location of colleges in regional urban areas more obvious, this posed no special problem. But in the more densely populated eastern half of the Commonwealth where community college services were inadequate, the definition of regions required the subdivision of existing service areas into an additional number of regions in order to plan for additional colleges which would meet the criteria enumerated above.

Of the colleges previously established, the regions served by Berkshire, Cape Cod, Greenfield and Holyoke permitted little or no modification; the regions originally served by Massachusetts Bay, Northern Essex, Quinsigamond and Mount Wachusett were modified or subdivided in order to provide regions for additional colleges.

Some of the factors considered in defining regions were:

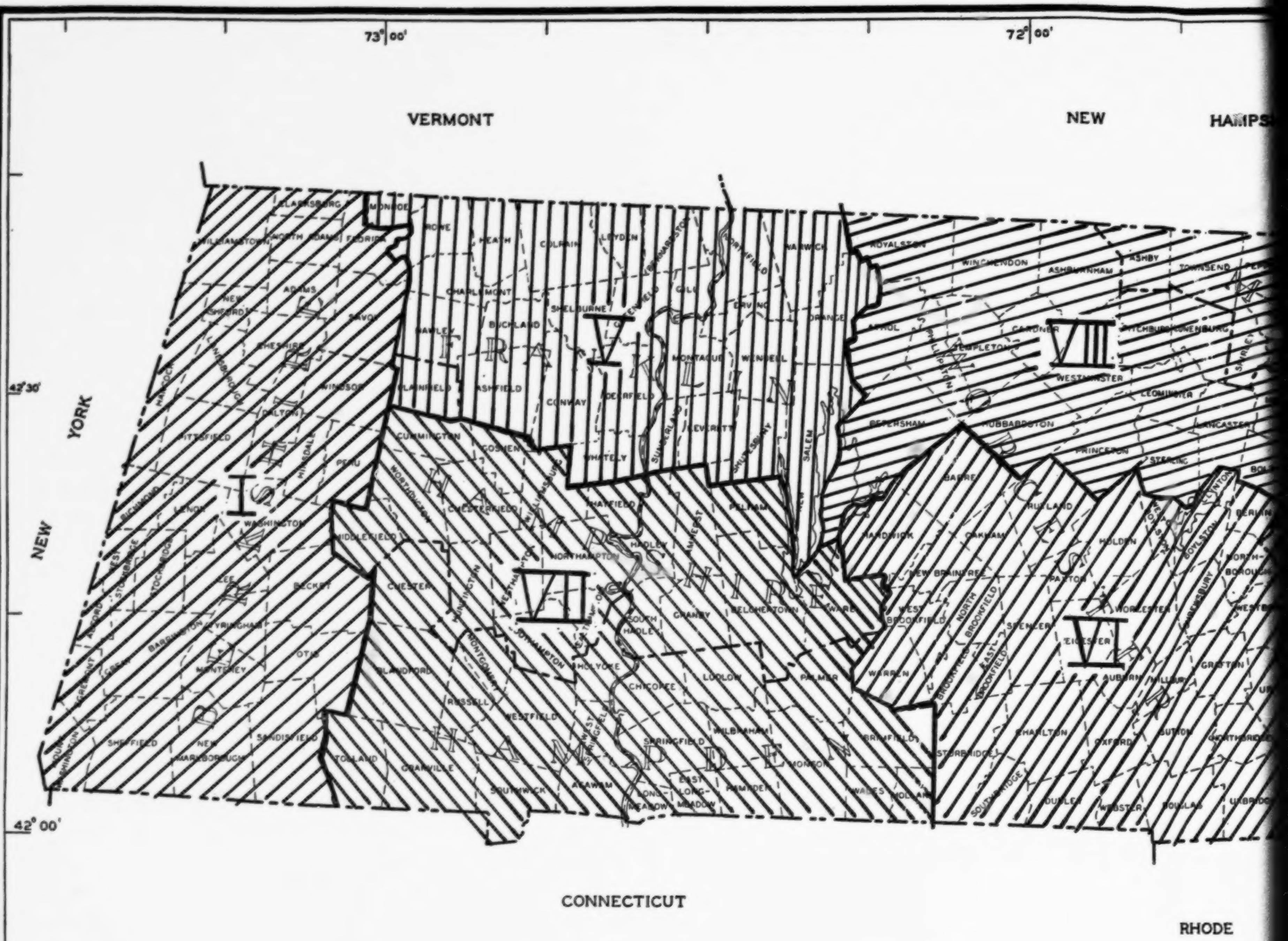
1. Total populations and the growth trends of population
2. Numbers and trends of projected high school graduates
3. Rates and changes of rates of "college-going" by high school graduates
4. Highways and transportation networks, both present and planned
5. "Natural" regions based on:
   a. Industry
   b. Business and retail markets
   c. Socio-economic homogeneity

As a result of these studies sixteen regions were identified. (See accompanying map.) These included the eight regions in which colleges had already been established. The 1958 plan envisioned twelve colleges, including the eight already established; in addition, colleges were planned for North Shore (opened in the fall of 1965), South Shore, West Suburban, and Southeast Massachusetts (opened as Bristol Community College in the fall of 1966). The present plan recommends four additional colleges for a total of sixteen to be founded before 1975: Northwest Suburban, Southwest Suburban, South Suburban (opened as Massasoit Community College in the fall of 1966) and Southwest Boston. A comparison of total populations of these regions for 1950, 1960 (U.S. Census) and 1965 (Massachusetts State Census) and the rates of change between these dates is shown in Table 2; these data are analyzed by rate of change in Table 3 and by gross population in Table 4.

Basis of Enrollment Projections

In projecting enrollments for the sixteen community colleges recommended to be in operation in the next ten years, there are three very significant assumptions:

1. All colleges are in full operation with comprehensive curriculums fully developed;
2. All colleges have adequate, fully operational permanent campuses and staffs, planned to house the curriculum and teach the potential enrollment, and with budgets sufficient to operate and maintain the program at a satisfactory level of support.
3. An "open door" admissions policy.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MONROE
WILLIAMSTOWN
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FLORIDA
ADAMS
NEW ASHFORD
CHESHIRE
SAVOY
HANCOCK
WINDSOR
DALTON
PITTSFIELD
LANESBOROUGH
HINSDALE
PERU
RICHMOND
LENOX
WASHINGTON
STOCKBRIDGE
LEE
BECKET
ALFORD
WEST STOCKBRIDGE
GREAT BARRINGTON
TYRINGHAM
MONTEREY
OTIS
EGREMONT
SHEFFIELD
NEW MARLBOROUGH
SANDISFIELD
MOUNT WASHINGTON
ROWE
HEATH
COLRAIN
LEYDEN
BERNARDSTON
NORTHFIELD
WARWICK
CHARLEMONT
SHELBURNE
GREENFIELD
GILL
ERVING
ORANGE
HAWLEY
BUCKLAND
MONTAGUE
WENDELL
PLAINFIELD
ASHFIELD
CONWAY
DEERFIELD
SUNDERLAND
LEVERETT
SHUTESBURY
NEW SALEM
WHATELY
CUMMINGTON
GOSHEN
WORTHINGTON
CHESTERFIELD
WILLIAMSBURG
HATFIELD
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PELHAM
MIDDLEFIELD
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HADLEY
CHESTER
HUNTINGTON
WESTHAMPTON
EASTHAMPTON
SOUTH HADLEY
GRANBY
BELCHERTOWN
WARE
MONTGOMERY
HOLYOKE
BLANDFORD
RUSSELL
WESTFIELD
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LUDLOW
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SPRINGFIELD
WILBRAHAM
MONSON
BRIMFIELD
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GRANVILLE
SOUTHWICK
AGAWAM
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EAST LONGMEADOW
HAMPDEN
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ROYALSTON
WINCHENDON
ASHBURNHAM
ASHBY
TOWNSEND
ATHOL
PHILLIPSTON
GARDNER
TEMPLETON
FITCHBURG
LUNENBURG
WESTMINSTER
LEOMINSTER
PETERSHAM
HUBBARDSTON
LANCASTER
PRINCETON
STERLING
BARRE
RUTLAND
BOYLSTON
HARDWICK
OAKHAM
HOLDEN
BERLIN
NEW BRAINTREE
PAXTON
NORTHBOROUGH
WEST BROOKFIELD
NORTH BROOKFIELD
SPENCER
WORCESTER
SHREWSBURY
LEICESTER
WESTBOROUGH
WARREN
BROOKFIELD
EAST BROOKFIELD
AUBURN
MILLBURY
GRAFTON
STURBRIDGE
CHARLTON
OXFORD
SUTTON
NORTHBRIDGE
SOUTHBRIDGE
DUDLEY
WEBSTER
DOUGLAS
UXBRIDGE

RECOMMENDED COMMUNITY COLLEGE
MASTER PLAN, 1966

I	Berkshire
II	Massachusetts Bay
III	Cape Cod
IV	Northern Essex
V	Greenfield
VI	Quinsigamond
VII	Holyoke
VIII	Mt. Wachusett
IX	North Shore
X	West Suburban
XI	Bristol
XII	South Shore
XIII	Northwest Suburban
XIV	Southwest Suburban
XV	Southwest Boston
XVI	Massasoit

DED
4/1/66

THE COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF COMMERCE AND DEVELOPMENT
DIVISION OF PLANNING

CITIES, TOWNS AND COUNTIES IN MASSACHUSETTS

NOTE: NORFOLK COUNTY INCLU
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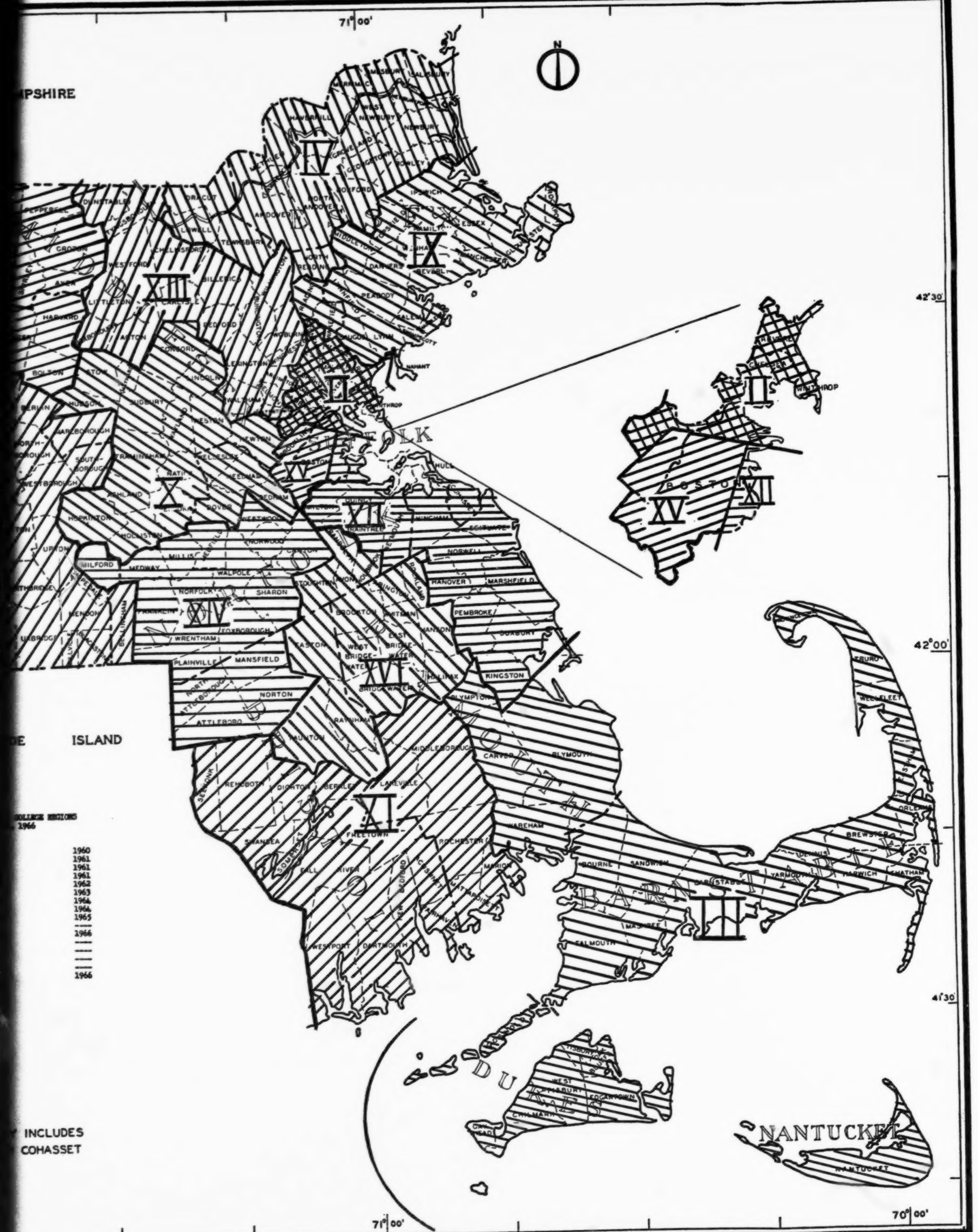
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BARNSTABLE
DUKES
NANTUCKET
ESSEX
MIDDLESEX
BOSTON
AMESBURY
SALISBURY
MERRIMAC
WEST NEWBURY
NEWBURY
HAVERHILL
METHUEN
GROVELAND
GEORGETOWN
ROWLEY
BOXFORD
IPSWICH
NORTH ANDOVER
ANDOVER
DRACUT
DUNSTABLE
PEPPERELL
GROTON
LOWELL
TEWKSBURY
CHELMSFORD
WESTFORD
BILLERICA
AYER
HARVARD
LITTLETON
CARLISLE
BEDFORD
ACTON
BOXBOROUGH
WOBURN
CONCORD
LEXINGTON
LINCOLN
BOLTON
HUDSON
SUDBURY
WALTHAM
WESTON
BERLIN
MARLBOROUGH
NORTHBOROUGH
SOUTHBOROUGH
FRAMINGHAM
WELLESLEY
NEWTON
WESTBOROUGH
NATICK
NEEDHAM
ASHLAND
DOVER
DEDHAM
HOPKINTON
WESTWOOD
HOLLISTON
NORWOOD
UPTON
MILFORD
MEDWAY
MILLIS
WALPOLE
NORFOLK
SHARON
FRANKLIN
FOXBOROUGH
MENDON
UXBRIDGE
BELLINGHAM
WRENTHAM
PLAINVILLE
MANSFIELD
NORTH ATTLEBOROUGH
NORTON
ATTLEBORO
EASTON
BROCKTON
STOUGHTON
WEST BRIDGEWATER
EAST BRIDGEWATER
BRIDGEWATER
RAYNHAM
TAUNTON
MIDDLEBOROUGH
REHOBOTH
SEEKONK
DIGHTON
BERKLEY
LAKEVILLE
SWANSEA
SOMERSET
FALL RIVER
FREETOWN
NEW BEDFORD
ROCHESTER
MARION
ACUSHNET
FAIRHAVEN
WESTPORT
DARTMOUTH
HAMILTON
ESSEX
MANCHESTER
BEVERLY
DANVERS
MIDDLETON
NORTH READING
PEABODY
LYNNFIELD
SALEM
LYNN
SWAMPSCOTT
NAHANT
WINTHROP
CHELSEA
REVERE
HULL
QUINCY
BRAINTREE
HINGHAM
SCITUATE
NORWELL
HANOVER
MARSHFIELD
PEMBROKE
DUXBURY
HANSON
WHITMAN
HALIFAX
KINGSTON
PLYMPTON
CARVER
PLYMOUTH
WAREHAM
BOURNE
SANDWICH
BARNSTABLE
YARMOUTH
DENNIS
HARWICH
CHATHAM
BREWSTER
ORLEANS
EASTHAM
WELLFLEET
TRURO
MASHPEE
FALMOUTH
GOSNOLD
TISBURY
WEST TISBURY
EDGARTOWN
CHILMARK
GAY HEAD
NANTUCKET
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COLLEGE REGIONS
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Table 2. Population Statistics for Regional Community College Regions in thousands.

Region	1950[a]	1960[a]	per cent ± 1950–1960	1965[a]	per cent ± 1960–1965
Berkshire*	132.0	142.1	+ 6.9	145.6	+ 2.4
Massachusetts Bay*	809.6	739.7	− 8.6	663.3	−10.3
Cape Cod	79.3	106.4	+34.1	112.3	+ 5.5
Northern Essex*	332.5	349.6	+ 5.1	363.9	+ 4.1
Greenfield*	53.0	55.1	+ 4.0	57.9	+ 5.2
Quinsigamond*	417.1	450.8	+ 8.1	476.3	+ 5.7
Holyoke*	455.3	532.3	+16.9	535.1	+ .5
Mt. Wachusett*	154.3	176.2	+14.2	172.9	− 1.9
North Shore	341.3	392.8	+15.1	422.9	+ 7.7
South Shore	330.9	377.2	+14.0	397.1	+ 5.3
Southeast Massachusetts	303.3	309.5	+ 2.0	322.0	+ 4.1
West Suburban	238.9	329.3	+37.8	360.3	+ 9.4
Northwest Suburban (new)	259.6	345.7	+33.2	391.0	+13.1
Southwest Suburban (new)	142.9	194.6	+36.2	223.2	+14.7
Southwest Boston (new)	453.1	408.9	− 9.8	380.7	− 6.9
South Suburban (new)	186.2	238.5	+28.1	270.8	+13.6
Total	4,690.5	5,148.6	+ 9.8	5,295.3	+ 2.8
Average	293.2	321.8	+ 9.8	331.0	+ 2.8
Median	281.5	337.5	+19.9	362.1	+ 7.3

[a] Figures from the U. S. Census (1950, 1960) and the Massachusetts Census (1965) are not comparable. This is due to different definitions and enumeration methods. Kevin H. White, Secretary of the Commonwealth, explains it this way in the advanced report of the Massachusetts Decennial Census of 1965: "The Federal Census enumerates each person where he is found on the census day, regardless of whether he considers that municipality his permanent domicile or not. The Decennial Census of Massachusetts counts only those persons who claim to reside in a particular Massachusetts community. Hence, persons living on military reservations, students in educational institutions, and the like, are not enumerated in the State Census unless they consider Massachusetts their permanent residence." Obviously then, the comparability of the 1960/1965 figures would be less valid for those regions in which "transients" are a significant factor than those regions where these categories are not significant.

* Established prior to Master Plan Study.

Table 3. Rank Order of Community College Regions by Per Cent of Gross Population Change 1960-1965.

Southwest Suburban (new)	+14.7
South Suburban (Massasoit) (new)	+13.6
Northwest Suburban (new)	+13.1
West Suburban	+ 9.4
North Shore	+ 7.7
Quinsigamond	+ 5.7
Cape Cod	+ 5.5
South Shore (Median+5.25)	+ 5.3
Greenfield	+ 5.2
Northern Essex	+ 4.1)
Southeast Massachusetts (Bristol)	+ 4.1)
Berkshire	+ 2.4
Holyoke	+ .5
Mt. Wachusett	− 1.9
Southwest Boston (new)	− 6.9
Massachusetts Bay	−10.3
Average	+ 4.51

Table 4. Rank Order of Community College Regions by Gross Population 1965.

Massachusetts Bay	663,289
Holyoke	535,085
Quinsigamond	476,314
North Shore	422,881
South Shore	397,091
Northwest Suburban (new)	390,976
Southwest Boston (new)	380,655
Northern Essex (Median 362,119)	363,905
West Suburban	360,332
Southeast Massachusetts (Bristol)	322,043
South Suburban (Massasoit) (new)	270,788
Southwest Suburban (new)	223,213
Mt. Wachusett	172,908
Berkshire	145,597
Cape Cod	112,256
Greenfield	57,948
Average	330,955

It is recognized that these assumptions are idealistic, and to this extent unrealistic, since a system of colleges certainly does not spring "full-blown" into operation as of a particular moment of time. However, these are the only possible assumptions because there is no pragmatic way to forecast the rate at which the community college system will develop or even that it will be developed as herein recommended inasmuch as there is no means of assessing future changes of circumstances, attitudes or the public and legislative receptivity toward the community college movement.

It is well known that college enrollments have grown since World War II at a compound rate: the absolute *number* of high school graduates has been growing rapidly and the *rate* (percentage) at which they have sought college admission has also been increasing. Thus, college enrollments have been increasing at an increasing rate.

One basis of estimating enrollments is to use the total population of the region, applying various ratios empirically observed of the relationships of actual community college enrollments to total population. Table 5 gives the enrollments that might have been expected in the sixteen community colleges for the fall of 1965 *on the assumption that all the colleges were in full operation as of that date.*

A more precise basis of projection, however, is the relation of community college enrollments to high school graduates, rather than the total population, since the high school age and high school graduate components in the total population will vary from region to region. (See Table 6.) Important, too, is the high school graduate rate of "college-going". (See Table 7.)

Estimates of the numbers of high school graduates in Massachusetts for the next few years are extremely tenuous. The best available come from the State Department of Education and are shown in Table 8.

Table 5. Institutional Size, 1965 Population, Based on Standard Formulae.

Region	1965	1965 ENROLLMENT[1]			
	Population 00's	Actual	3.6/1,000	5.0/1,000	7.5/1,000
Berkshire (1960)	145.6	531	524	728	1,092
Massachusetts Bay (1961)	663.3	1,110	2,387	3,317	4,975
Cape Cod (1961)	112.3	518	404	562	842
Northern Essex (1961)	363.9	703	1,310	1,820	2,729
Greenfield (1962)	57.9	423	208	290	434
Quinsigamond (1963)	476.3	747	1,715	2,382	3,572
Holyoke (1964)	535.1	909	1,926	2,675	4,013
Mt. Wachusett (1964)	172.9	477	622	865	1,297
North Shore (1965)	422.9	462[a]	1,522	2,115	3,172
South Shore	397.1	—	1,430	1,986	2,978
Southeast Massachusetts	322.0	—	1,159	1,610	2,415
West Suburban	360.3	—	1,297	1,800	2,702
Northwest Suburban (new)	391.0	—	1,408	1,955	2,933
Southwest Suburban (new)	223.2	—	804	1,116	1,674
Southwest Boston (new)	380.7	—	1,370	1,904	2,855
South Suburban (new)	270.8	—	974	1,354	2,031
Total	5,295.3	5,980	19,060	26,479	39,714

[a] Freshmen only.

[1] Professor Norman Harris of the University of Michigan, consultant to the Pennsylvania State Department of Public Instruction quoted in *Plan for a Bucks County Community College.* In contrast, the state of Rhode Island has used 36 to 50 per 10,000 population as the high and low range in estimating future community college enrollment. In view of the fact that several community colleges have passed or are approaching the 50:10,000 ratio, 75:10,000 appears to be a more reasonable working figure for Massachusetts.

Table 6. Comparison of Regional Differences of Ratio of High School Graduates to Total Population.

Region	Ratio of Projected 1966 Graduates to Total Population
Berkshire	1.08
Massachusetts Bay	.97
Cape Cod	1.52
Northern Essex	1.19
Greenfield	1.50
Quinsigamond	1.18
Holyoke	1.10
Mt. Wachusett	1.31
North Shore	1.30
South Shore	1.10
Southeast Massachusetts	.81
West Suburban	1.44
Northwest Suburban	1.31
Southwest Suburban	1.40
Southwest Boston	.64
South Suburban	1.25
State Total	1.14
Regional Average	1.19

Table 7. Comparison of Regional Differences in the Rate of "College-Going" for 1966.

Region	1966 Rate of "College-going"
Berkshire	54.7
Massachusetts Bay	44.8
Cape Cod	53.5
Northern Essex	54.8
Greenfield	61.8
Quinsigamond	59.9
Holyoke	59.3
Mt. Wachusett	54.3
North Shore	62.3
South Shore	55.5
Southeast Massachusetts	56.3
West Suburban	71.3
Northwest Suburban	62.5
Southwest Suburban	71.8
Southwest Boston	55.0
South Suburban	49.8
State Total	58.0
Regional Average	58.0

Table 8. Projections of Graduates from Massachusetts High Schools, Public and Private 1958-1980.[1]

Year	Public	Private	Total
1958	32,896	9,274	42,170
1960	40,972	11,754	52,726
1962	43,309	11,572	54,881
1963	42,787	11,500	54,287
1964	57,287	15,539	72,826
1965	63,423	13,681	77,104
1966[2]	58,500	15,500	74,000
1967	58,000	15,000	73,000
1968	58,500	15,500	74,000
1969	62,000	16,000	78,000
1970	65,000	17,000	82,000
1971	65,500	17,500	83,000
1972	68,000	18,000	86,000
1973	69,500	18,500	88,000
1974	71,000	19,000	90,000
1975	72,500	19,500	92,000

[1] Data provided by Division of Research and Statistics, Mass. Department of Education.

[2] Actual count through 1965; projections from 1966 on.

Source: *Fourth Annual Report,* Advisory Board of Higher Education Policy, December, 1965, Dr. Richard V. McCann, Director of Research.

State-wide estimates, however, were of no use to this Master Plan study since figures were needed to project high school graduates on a town-by-town basis in order to ascertain the potential enrollments of community colleges *by regions*. Projections of graduates town-by-town (or high school by high school) do not exist. Therefore, it was necessary to design another means to secure these estimates. This was done by computer as described below.

The computer project had two objectives:

1. To project the number of high school graduates on a town-by-town basis for each year through 1974;
2. To select locations (regions) for community colleges.

The projected potential community college populations were determined and the ultimate site selection was made on the basis of the following criteria established by the Community College Board:

1. Commuting time must be less than 45 minutes.
2. No college should be started with an initial potential of less than 300 students. The

school region must be able to project 750 students after two years, and 2,000 after 10 years.

3. A general upper enrollment limit was set at 7,500 per urban Boston school, and 5,000 per school throughout the rest of the state.
4. At least 95% of the potential students in Massachusetts would be the minimum percentage of students able to attend.

Hence, the number of locations became a function of people and time; the goal was to maximize the number of people attending a minimum number of institutions (i.e., locations).

More than fifty solutions satisfied the limits of the computer program and were printed out. Of these, four indicated eight centroids (college regions) in addition to the six colleges (Berkshire, Massachusetts Bay, Cape Cod, Northern Essex, Quinsigamond, and Southeast Massachusetts (Bristol)), which had been excluded because permanent sites had been acquired for them; an additional sixteen solutions indicated nine centroids (college regions), making a minimum total number of community college regions proposed by the computer to be 14 or 15. These 20 solutions of eight or nine additional centroids were plotted by their co-ordinates against the sixteen regions that had previously been identified empirically. The result was a gratifying confirmation and verification of the regions defined earlier.

Projected Enrollments of the Several Colleges

Regardless of the reliability of statistical techniques, results often need to be revised and refined by "educated" guesses based on subjective judgments involving trends and data which cannot be injected into the statistical procedures. Table 9 indicates revised estimates of the probable enrollments at the various community colleges based on the assumptions and reservations already outlined plus subjective adjustments. Each college is discussed separately.

Berkshire: There are several factors affecting this estimate. The school superintendents of the region project a substantially higher number of high school graduates than indicated by the computer study. Other higher education facilities in the region are limited to one private men's liberal arts college with a very restrictive admissions policy and one public state college located at the northern boundary of the region. There are no other occupational education facilities in the region and the community college will have to serve the total need for this type of education.

Table 9. Subjectively *Revised Estimates of 1975 Enrollments.**

	1975 Computer Projections	1975 Subjectively Revised Estimate
Berkshire	872	1500
Massachusetts Bay . .	3622	5000
Cape Cod	1985	2000
Northern Essex . .	3703	3700
Greenfield	622	1200
Quinsigamond . .	5144	5000
Holyoke	4587	5000
Mt. Wachusett . .	2024	2000
North Shore	4983	5000
South Shore	2992	3000
Southeast Massachusetts (Bristol)	1621	2500
West Suburban . .	5680	4500
Northwest Suburban .	5949	4500
Southwest Suburban . .	3927	3000
Southwest Boston . .	1116	2000
South Suburban (Massasoit) . .	2747	3000
Total	51,574	52,900

* Note assumptions for both projections and estimates as outlined at the beginning of this section.

Massachusetts Bay: The computer calculations are based on empirical data which reflect the declining population (and school enrollment) in the city of Boston. It is reasonably certain that this declining population curve will "bottom-out" at some point and at some time, although neither of these can be forecast. The computer projection, it will be recalled, was a straight-line calculation based on declining trends which were assumed to continue indefinitely. Relative to other community college regions, the Massachusetts Bay region contains an unusually high percentage of parochial school enrollments which are not reflected in the computer data. Finally (and hopefully) it is entirely possible that the currently low rate of "college-going" will be significantly improved when adequate occupational curriculums become available to the students of the region.

Cape Cod: Simply a "rounding-off" of the computer projections.

Northern Essex: ditto

Greenfield: The college is already producing an unusually high rate of enrollment per 1,000 of gross population and could continue to do so.

Quinsigamond: Simply a "rounding-off" of the computer projections.

Holyoke: The same factors are taken into account as those affecting the estimates for Massachusetts Bay: possible errors in computer projections, possible changes in the rate of "college-going", and the parochial school enrollments.

Mt. Wachusett: Simply a "rounding-off" of the computer projections.

North Shore: ditto

South Shore: ditto

Southeast Massachusetts (Bristol): The college serves a large regional gross population. The current low rate of "college-going" may be improved by the availability of new educational facilities (SMTI and the new area vocational school as well as the community college). There is a high proportion of parochial school enrollments. Offsetting these plus factors is the possible impact of improved East-West highways and the developing community college system in Rhode Island.

West Suburban: The region already has an unusually high rate of "college-going" which will "top-off" at some unpredictable level. Many of the college-bound students attend public or private residential colleges outside the region. A significant proportion of the school age population attends private elementary and secondary schools, both day schools and boarding schools. These students are likely also to attend colleges away from home.

Northwest Suburban: Adjusted by the influence of the same factors affecting the West Suburban region. In addition, the recent high rate of population growth reflected in the computer input may have produced an over-estimate of community college enrollment for the region.

Southwest Suburban: Adjusted by the same factors affecting both West Suburban and Northwest Suburban.

Southwest Boston: Adjusted by the same factors affecting Massachusetts Bay, also an urban college. Brookline, a component of the region, is characteristically like the West Suburban region and will be affected by the same factors.

Massasoit: Simply a "rounding-off" of the computer projections.

Criteria for Construction Priorities

This section deals with recommended priorities for construction of permanent facilities for community colleges *already established* and the criteria therefor and with the recommended priorities for the establishment of recommended new colleges.

Criteria are based on the following assumptions:

1. Only Massachusetts Bay, Greenfield, Quinsigamond, Holyoke, Mt. Wachusett and North Shore are involved.
    a. Other colleges are already committed to a priority order: Cape Cod, Northern Essex, Berkshire, Massasoit, Bristol.
    b. Colleges planned but not yet founded (West Suburban, Northwest Suburban, Southwest Suburban, South Shore, and Southwest Boston) will be evaluated under a new Board policy which will consolidate recommendations regarding order of founding and order of capital construction in a single Board decision. Under the old Board policy, colleges were founded first in temporary facilities with sites and permanent construction to be planned and funded later; under the new policy, effective with the establishment of Bristol and Massasoit in 1966, new colleges will be *commenced* in minimum permanent facilities master-planned for subsequent additions as enrollment and curriculum require.
2. Priority decisions by the Board based on these criteria will be implemented and funded as requested.

It is assumed that with legislative support the development of permanent campuses can proceed in an orderly manner from site acquisition to appointment of architects and appropriation of planning and construction money. The present status (July, 1966) of campus development is as follows:

Massachusetts Bay: site committed, architect appointed, planning and site development money requested in FY '67, no construction money.

Greenfield: site acquired, has planning money and architect, no construction money.

Quinsigamond: no site, no architect, planning money requested in FY '67, no construction money.

Holyoke: no site, no architect, no planning or construction money. Renovation of temporary site is complete.

Mt. Wachusett: site acquired, no architect, no planning or construction money.

North Shore: no site, no architect, no planning or construction money.

Massasoit: site being negotiated, architect appointed, planning money and first phase construction money available, second phase construction money to consolidate with first phase construction requested in FY '67.

Bristol: site acquired, architect appointed, planning money and first phase construction money available, second phase construction money to consolidate with first phase construction requested in FY '67.

Other criteria that are important considerations in determining the order of construction of new college campuses are the following (the order of listing does not imply the order of weight assigned to the criteria):

1. Date of founding.
2. Actual and/or planned comprehensiveness of curriculum and urgency of curriculum development in order to serve the region.
3. Adequacy of temporary plant, especially as regards specialized facilities and/or relative feasibility of renovation *versus* new capital investment to improve actual or implement planned comprehensive curriculum.
4. Terms of occupancy or leasehold of temporary site.
5. Actual or committed renovation investment and rate of amortization, per capita.
6. Adequacy of location of temporary site evaluated in terms of standard location criteria: relation to population centroid, highway and public transportation access, relation to actual or planned service area.
7. Instructional capacity relative to actual and estimated enrollment; actual rate of growth relative to capacity and anticipated rate of growth.

Construction Priorities Among Existing Colleges

The order of priority for the construction of permanent campuses for Colleges already established is recommended on the basis of the following discussion.

I. *Massachusetts Bay*

Since its establishment in 1961, Massachusetts Bay has been plagued by plant deficiencies which have made it impossible to fulfill its role as an urban community college. Limited space has not permitted an approach to an "open door" admissions policy and the potentially largest College has been severely restricted in enrollment, thus denying access to community college services to a great many urban students most in need of this kind of educational opportunity. The same space limitations have prevented the College from developing a fully comprehensive curriculum to meet the broad and diverse needs of its constituency.

During academic 1965-66 the College operated at two locations. The Watertown site was not ready on schedule, thus causing unusually difficult problems of administration and scheduling. In the fall of 1966, it will consolidate operations at Watertown. While much better physically than Garrison Street, Watertown is not much larger. Thus, although forced to move to another temporary facility, the College cannot accommodate many more students. Relocatable classrooms are planned (themselves an unsatisfactory alternative to an adequate permanent planned campus) but again these will not be ready on schedule.[1]

In the meantime a permanent site has been selected in the Charlestown Redevelopment Area. Architects have been appointed, site acquisition money, planning and site development funds have been appropriated. No construction money is yet available.

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[1] The "occupancy date" is now scheduled for September, 1967.

As part of an extensive and complex redevelopment project, the permanent campus will progress no more rapidly than the project as a whole. A minimum of another five years in temporary and inadequate facilities is probably inevitable because of inherent delays in a redevelopment project.

The College, always with inadequate facilities and with two changes of location in ten years, will be unable to make satisfactory progress toward the proper development of its image as a higher education institution or toward the fulfillment of its public responsibility as to size or curriculum. These are real handicaps and everything possible should be done to push along its permanent plant as rapidly as possible. Massachusetts Bay's problems are urgent and deserve the highest priority of attention and capital money.

II. *North Shore*

Although not established until the fall of 1965, it is already evident that the size of the institution was seriously underestimated. Like those of the other colleges, the temporary plant is inadequate as to size and the specialized facilities necessary for a broadly comprehensive curriculum. In a very brief time North Shore's problems and shortcomings will be intolerable. Furthermore, this College should be able to provide some relief for the enrollment pressures on Massachusetts Bay.

Young as the institution is, a site should be identified and acquired as early as possible, architects appointed and planning money appropriated. The urgency of the North Shore problems is second only to Massachusetts Bay and it should be assigned priority two.

III. *Greenfield*

This college was established in 1962. It occupies an old but renovated public school building. The region it serves is without other higher education facilities. The population of the region is small with a low record of "college-going" among high school graduates.

As is so often true of regions of this sort, the availability of a community college has had an important impact on the community both educationally and culturally. On account of the proximity of the College, the rate of "college-going" has increased significantly. The ratio of community college enrollment to high school graduates and to gross population is the highest of any of the Commonwealth's community colleges. The College is making a significant contribution to the cultural and economic life of the community. Much of its evening and adult work is jointly sponsored by the College and MDTA.

Thus far, the College had been able to accommodate all qualified applicants in its temporary facilities, but its curriculum development has been severely restricted by the lack of specialized facilities and it is probably uneconomical to invest in specialized instructional facilities in a temporary plant.

The permanent site has been acquired, which is the first step toward a new permanent campus. Architects have been appointed and planning money appropriated.

Acknowledging the inadequacy of the present temporary facilities, the College so far (but not for long) has been able to handle its enrollment load. The College requested and received rental funds for FY '67 to accommodate its enrollment overload. The case for a high priority assignment is deserving and convincing, but the problems of Massachusetts Bay and North Shore appear to be more urgent. For these reasons priority three should be assigned to Greenfield.

IV. *Mt. Wachusett*

This College was established in 1964 and graduated its first class in June, 1966. It thus has completed only one full curriculum cycle. In its brief history it has been able to accommodate all qualified applicants, and rental money (to alleviate over-crowding) is not requested for FY '67. The enrollment is small and growth will probably be small and steady. Present facilities, while having some of the short-comings of all temporary plants, are nicely renovated and should be occupied for some additional years in order to reduce the amortized per capita capital cost.

A delay in capital construction would give the College staff time to plan carefully the permanent campus and the curriculum it is to contain on the basis of further experience.

A permanent site has been identified and is in process of acquisition. Architects should be appointed and planning money appropriated reasonably soon, but construction should not be funded until the first three priorities are under way.[1]

V. *Quinsigamond*

This College was founded in 1963 in space renovated from a portion of the City of Worcester's Belmont Home. Additional buildings are available to renovate for expansion, and it is possible that a sufficient portion of this site could be acquired for a permanent campus if and when this is judged to be desirable.

According to the best estimates at hand, the College should grow rapidly and this variable must be kept in mind if the College is not to be hampered in fulfilling its role of service to the region.

The new University Medical School site is adjacent to the present community college location. This proximity could be a considerable advantage, or with other significant variables it could be a disadvantage. These matters are currently under investigation by consultants.

There is no permanent site and none should be settled upon until decisions can be made regarding the factors enumerated above. There is no need for architects and planning money until the location problem has been decided. Construction funds would not be required until sometime thereafter; hence priority five is recommended.

VI. *Holyoke*

This College is probably the most complex as regards its permanent facilities. Founded in 1946 as a municipal junior college it did not come under the jurisdiction of the state community college system until 1964. Thus it combines in one institution the relative maturity of a twenty-year-old College and the youth of an institution which has just graduated its first class under the state system.

Founded as a college for Holyoke it is poorly located as a state community college in terms of the population, transportation, business and industry of the region it is now intended to serve. Yet the temporary facilities of its present location are probably the most adequate of any of the existing community colleges and the renovation investment in these facilities is the heaviest by a large margin.

Unlike many of the other community college regions, the Holyoke region both in terms of the present location of the College and of any likely permanent location, is relatively well-served with other higher education services, both public and private. Decisions regarding the permanent location and role of Holyoke Community College ought not to be made without reconciling the role and future plans for the Springfield Technical Institute.[2]

Holyoke Community College, on the basis of the best projections available, should be one of the fastest growing of the state's community colleges. The space is available in its present temporary location to accommodate this growth for some time to come.

Because the facilities are quite adequate in size and quality and because of the heavy renovation investment already made, priority six is recommended.

Recommended Additional Colleges

Under the new policy of the Board of Regional Community Colleges, the additional colleges recommended in this Master Plan will be established on new, permanent campuses and not, if avoidable, in temporary facilities.

Under the 1958 Master Plan, twelve Community Colleges were contemplated; ten of these are in being:

1960 — Berkshire
1961 — Mass. Bay
1961 — Cape Cod
1961 — Northern Essex
1962 — Greenfield
1963 — Quinsigamond
1964 — Holyoke
1964 — Mount Wachusett
1965 — North Shore
— West Suburban
1966 — Southeast Mass. (Bristol)
— South Shore

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[1] Correspondence from President Haley, under date of June 20, 1967, makes the following comment: "We are ready to utilize planning money now. Our new campus is in hand and a faculty committee meeting through the last academic year (1966-67) has designed the educational specifications. We truly have a critical need for an architect and . . . no waste of time will ensue once he is available."

[2] By Ch. 273, Acts of 1967, the Springfield Technical Institute was transferred from the city of Springfield to the jurisdiction of the Massachusetts Board of Regional Community Colleges and its location established on the site of the former Springfield Armory. Under the terms of the Act, as a community college, the Springfield Technical Institute is to retain its primary emphasis on post-secondary technical education.

The 1966 Master Plan recommends four additional units:

Northwest Suburban
Southwest Suburban
Southwest Boston
1966 — South Suburban (Massasoit)

It should be noted that the two remaining unfounded units of the 1958 Master Plan and the four additional units recommended in the 1966 Master Plan are located in the heavily-populated eastern third of the Commonwealth. With one exception—Southeast Massachusetts (Bristol)—all of the six are recommended for the Boston Greater Metropolitan Area.

With the exception noted below, the remainder of the Commonwealth is adequately provided with community college services so far as geographic and population coverage are concerned for the foreseeable future (through the fall of 1975) *if it is assumed that progress toward planned expanded plant, staff, and facilities is maintained or accelerated.*

This is a very significant assumption. The fact is that although community colleges have been strategically located both as to the present and the immediate future, their temporary plants and facilities, in general, are totally inadequate. The existing colleges have been restricted in their development toward the fulfillment of their proper role and function, college-by-college, in any one or more of the following respects:

1. Size
2. Specialized facilities
3. Quality of plant
4. Operating budget

The present rate of capital expenditure to provide adequate facilities is minimal. If it is the intent of the Commonwealth to provide quality education through the community college system by providing a quality physical plant, then the rate of capital construction must be accelerated. Until adequate plants are *in being,* each community college generation is being denied quality in this sector of higher education.

The Holyoke Region

The exception is the Holyoke region. The present College, in temporary facilities, is poorly located relative to the centroid of the regional population and relative to the present and future concentration of business and industry. It is the second largest community college region and by 1975 it could well be the largest if the City of Boston continues to lose population at the present rate. There are two alternatives for the future, either of which is valid:

1. When the permanent site for the College is selected it, should be to the south and somewhat to the east of Holyoke. This implies a location in Chicopee or Springfield. Choosing this alternative would result in a single, large institution (but not of unmanageable or uneconomic proportions) well-located in relation to the population, business and industry it is to serve.
2. The other alternative is to establish two facilities either as branch campuses or by dividing the region (see comments regarding this at the end of this section). This could be accomplished in either of two ways:
    a. locating the permanent site of the Holyoke College with a view toward dividing the region or developing a second campus in the future, or
    b. opening a branch campus or a second college at the time the permanent site of the Holyoke College is selected and the capital construction program is initiated.

The selection of alternative (2.) would result in two campuses (or colleges) of sufficient size to be economic and to offer a fully comprehensive curriculum. This is a satisfactory alternative. However, in view of the capital costs of constructing a second complete facility and the planned improvement of transportation in the region, the first alternative (a single, large institution, better located) is probably preferable.[1]

Whether alternative (1.) or (2.) is selected, the relocation of the Community College from its present temporary site to a permanent site(s) nearer the regional concentration of population, business and industry could result in the strengthening of the Greenfield College. When the Holyoke College is moved (and assuming the completion of Interstate 91) the northern tier of towns in the Holyoke region (especially Williamsburg, Hatfield, Northampton, Hadley, Amherst and Pelham) could be transferred to the Greenfield region thus strengthening its population base.

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[1] The transfer of Springfield Technical Institute to the Board of Regional Community Colleges by Ch. 273, Acts of 1967, presents a *fait accompli* regarding the Board's options to choose among the alternatives cited. Future long-range planning for community college services in the Lower Connecticut Valley will depend upon the nature of the services rendered and the relationships that develop between the comprehensive community college in Holyoke and the Springfield Technical Institute emphasizing technical education.

Boston and the Suburbs

Since the *remaining* five colleges cannot be founded at the same time, a priority scheme must be planned. The objective of such a scheme is to increase accessibility and improve community college services, taking into account the existing institutions.

Key to the latter consideration is Massachusetts Bay and imponderables facing it in the next few years.

a. Since its founding, it has served a very large region because other community college services have not been available.

b. Its physical plant has been completely inadequate either to serve the enrollment it should serve or to provide a proper level of services to the enrollment it can accommodate. Transfer from the temporary Garrison Street site to the temporary Watertown site has resulted in little net gain in either capacity or level of service.

c. Access to a permanent facility is not a near prospect. Although a permanent site has been secured, architects appointed, and capital funds appropriated, the fact that the permanent location is part of the Urban Renewal project in Charlestown has meant, and will continue to mean delays in construction and occupancy over which the College and the Board of Regional Community Colleges have little or no control. In all probability the occupancy of the *completed and fully useable* Charlestown site cannot be anticipated before the fall of 1970; 1972, or even 1973 is a more realistic prospect.

Two priority schemes are suggested. The choice between them must rest upon a judgment as to the urgency of the Massachusetts Bay/City of Boston problem *versus* the problem of the burgeoning suburbs. In either scheme a major factor is relief of Massachusetts Bay in order to permit it to fulfill its role as an urban community college in terms of size, type of curriculum and quality of services. Each scheme is divided into five alternative sub-schemes based on the time schedule which the Board may wish to adopt in order to fulfill the recommendations of the Master Plan.

Plan A

Priority 1 — West Suburban
Priority 2 — South Shore
Priority 3 — Southwest Boston
Priority 4 — Northwest Suburban
Priority 5 — Southwest Suburban

The reasoning which suggests this order of priority follows:

Priority 1—West Suburban

a. Relieve Massachusetts Bay of pressure from the west suburbs.

b. Selecting the middle unit of the northwest, west, and southwest "crescent" of colleges would provide some (if inadequate) community college service to the northwest and southwest communities, in addition to the west, while at the same time further relieving Massachusetts Bay of pressure from these directions.

c. Place completion of the original Master Plan in higher priority than further implementation of the additional college units recommended in the new Master Plan.

d. The required community survey has been complete since February, 1965.

Priority 2—South Shore

a. Complete the 1958 Master Plan before further implementation of the new Plan.

b. Community survey has been complete since November, 1963.

c. Priority following West Suburban is assigned to South Shore despite earlier completion of the community survey because even though South Shore can relieve Massachusetts Bay, the relief provided by West Suburban would be larger and more directly felt.

d. High rank is given to South Shore in order that it may relieve Massasoit. As in the case of West Suburban, the "crescent" concept is again employed: Massasoit (1966) is the center unit of the southwest, south, and southeast "crescent" of colleges. But unlike the earlier colleges in the system, Massasoit will move to a permanent plant built to SCSD specifications. Because this permanent construction will be relatively small, and since older colleges will have a higher priority claim to available capital appropriations for permanent plant, Massasoit will be overcrowded and require relief long before it will be "entitled" to capital funds for expansion.

e. South Shore must open soon if it is to assume its proper role as a comprehensive community college in relation to the confused and conflicting area vocational school developments, specifically Quincy Trade High, South Shore, Southeastern, and to a lesser extent, Blue Hills area vocational schools.

Priority 3—Southwest Boston

a. Direct relief to Massachusetts Bay, to permit it to upgrade community college services to the northern suburbs which will provide its regular clientele at its permanent site in Charlestown.

b. A relatively high priority for Southwest Boston will provide additional community college services for the City of Boston sooner than will the completion and occupancy of the Massachusetts Bay Charlestown site.

Priority 4—Northwest Suburban

a. Massachusetts Bay will need relief even by the time priority 4 is reached.

b. Not only will Massachusetts Bay be relieved of pressure of enrollments from the northwest, but some community college service will be provided for students of the northern suburbs until Massachusetts Bay can provide it through occupancy of the Charlestown campus.

c. The population of the region is already large (400,000) and without community college services.

d. Not only is it a heavily populated region but it is the second fastest growing (after the Southwest Suburbs) and has a high rate of "college-going" among its high school graduates.

Priority 5—Southwest Surburban

a. Although the fastest growing suburban region, the rate of "college-going" is relatively low.

b. The population to be served is relatively small (225,000).

c. Community college services will be available from Massasoit, Southwest Boston, West Suburban and to some extent from Bristol.

Sub-plans Based on Time Schedule

A1	A2	A3	A4	A5
1967 — West Suburban	West Suburban	West Suburban South Shore	West Suburban South Shore	West Suburban South Shore
1968 — South Shore	South Shore SW Boston	SW Boston	SW Boston NW Suburban	SW Boston NW Suburban SW Suburban
1969 — SW Boston	NW Suburban SW Suburban	NW Suburban SW Suburban	SW Suburban	
1970 — NW Suburban				
1971 — SW Suburban				

Plan B

Priority 1 — West Suburban
Priority 2 — Southwest Boston
Priority 3 — Northwest Suburban
Priority 4 — South Shore
Priority 5 — Southwest Suburban

This plan depends on the Board's conclusions that:

a. the problems of space and facilities at Massachusetts Bay are critical, and the delays at the Charlestown site will not be mitigated;

b. the social and economic needs of the City of Boston are urgent.

In this case, the priority of Southwest Boston is upgraded to No. 2 and South Shore is dropped to No. 4. The reasoning which suggests this ranking follows:

a. Quicker relief can be given to Massachusetts Bay and more community college services can be made available to the students of the City of Boston through opening a second campus in temporary facilities rather than to await the realization of more adequate facilities at Charlestown.

Sub-plans Based on Time Schedule

B1	B2	B3	B4	B5
1967 — West Suburban	West Suburban	West Suburban SW Boston	West Suburban SW Boston	West Suburban SW Boston
1968 — SW Boston	SW Boston NW Suburban	NW Suburban	NW Suburban South Shore	NW Suburban South Shore SW Suburban
1969 — NW Suburban	South Shore SW Suburban	South Shore SW Suburban	SW Suburban	
1970 — South Shore				
1971 — SW Suburban				

b. South Shore is down-graded to priority No. 4 on the ground that its establishment is less urgent than the others because:

   1. although it is a heavily populated region (400,000), its rate of growth has been slow in the last five years, and the rate of "college-going" is relatively low and is increasing at a slower rate than that of some other regions.

   2. parts of the region will have access to community college services provided by Massachusetts Bay, Massasoit, Southwest Boston and even Cape Cod.

The Board of Regional Community Colleges should select either plan A or plan B as its guideline and one of the sub-plans as its time schedule. Naturally, such a decision at this time would not preclude a later change should circumstances warrant. But a decision now would permit enough time to complete the community surveys with reasonable leisure and thoughtful reflection. It would also permit budget planning far enough in advance so that the legislature could become aware of and reconciled to the capital and operating outlays which will be necessary if the community college system is to achieve fruition and make the contribution proposed by the *Audit* report and the Willis Commission report.

Since this Master Plan recommends the establishment of a second community college facility in the City of Boston, a question will inevitably arise as to the proper administrative organization of the two. There are two valid methods of organization; a legitimate case can be made for either:

a. Organize Massachusetts Bay as a multi-campus institution with an overall chief administrative officer reporting to the Board directly through the Board's President. In this case, each of the two (or more) campuses would require a chief administrative officer-vice-president, director or dean—whose reporting to the Board would be twice removed through the interposition of two intermediaries: the College President and the Board's President.

b. Organize the Southwest Boston campus (and subsequent campuses in the City) as a separate unit of the regional community college system. In this case the unit President, like those of other units in the system, would report to the Board directly through the Board's President.

Between the two alternatives there is probably little to choose on grounds of economy of operation or quality of service. On balance it would seem that the latter alternative would be preferable, since it would result in an organization similar to that of the rest of the system, in co-equal status of units in relation to the Board and its chief administrative officer, and finally and most important, in institutional autonomy and integrity.

SPACE AND CAPITAL COSTS

Estimates of Space Needs

In the very first stages of planning facilities it is useful to have general rules of thumb to estimate gross size and costs.

Recognizing that gross square footage per student will vary widely on the basis of the instructional program planned, a common estimate is 130-150 gross square feet per student, including approximately 30 per cent for walls, corridors, lobbies, utilities, mechanical spaces and "public space". Thus, a building complex planned for 1,500 students would contain approximately 195,000-225,000 square feet.

There is a simple formula for projecting the number of teaching stations needed. It will project only the minimum number based on the estimated total enrollment of the college in full operation. The formula is:

$$\frac{\text{Number of full-time equivalent students}}{\text{Average class size}} \times \frac{\text{Average hours per week students are in class}}{\text{Average hours per week rooms in use (utilization factor)}} = \text{Number of teaching stations needed.}$$

Obviously this formula takes no account of specialized instructional facilities, such as laboratories, which an institution must have regardless of size; therefore the teaching station figure yielded by the formula is minimum and must be adjusted upward to accommodate the projected program of the college. If applied on a course-by-course basis for each curriculum the college intends to offer, a more practical solution will be reached which will incorporate needed specialized or limited purpose teaching stations with multi-purpose stations such as general classrooms.

Table 10. Hypothetical Size and Costs for Community Colleges for which Total Capital Appropriations Have Not Been Made.

1966 Dollars

	Enrollment	Gross Square Feet at 135 Square Feet per student	TOTAL COSTS	
			At $5,100 per student	At $5,750 per student
Massachusetts Bay	5,000	675,000	$25,500,000	$28,750,000
Greenfield	1,200	162,000	6,120,000	6,900,000
Quinsigamond	5,000	675,000	25,500,000	28,750,000
Holyoke	5,000	675,000	25,500,000	28,750,000
Mt. Wachusett	2,000	270,000	10,200,000	11,500,000
North Shore	5,000	675,000	25,500,000	28,750,000
South Shore	3,000	405,000	15,300,000	17,250,000
Bristol	3,500	337,500	12,750,000	14,375,000
West Suburban	4,500	607,500	22,950,000	25,875,000
Northwest Suburban	4,500	607,500	22,950,000	25,875,000
Southwest Suburban	3,000	405,000	15,300,000	17,250,000
Southwest Boston	2,000	270,000	10,200,000	11,500,000
Massasoit	3,000	405,000	15,300,000	17,250,000
Total	45,700	6,169,500	$233,070,000	$262,775,000

Capital Costs

Five years ago, $4,000-$4,500 per student was a generally accepted capital cost figure, including both construction and equipment; but in the last five years both construction and equipment costs have increased at roughly five per cent per year. Translating this into 1966 dollars, this base estimate would now approximate $5,100-$5,750 per student. This estimate is very general since it is well-recognized that construction costs and rates of inflation vary widely in different sections of the country. Tentatively, then, without taking account of the many variables in estimating costs, it would be expected that a campus for 1,500 students would cost between $7,650,000 and $8,625,000.

Based on an assumption of 135 gross square feet per student, the hypothetical figures would represent an overall gross square foot cost per student of $37.77-$40.57. If it is assumed that about one third of capital costs would be in equipment, it would follow that gross construction costs, including site acquisition and site development, architects' fees, and other incidental costs and contingencies in addition to the contract building costs, would be between $25.18 and $27.04 per gross square foot. Table 10 reveals the total hypothetical cost to the Commonwealth, in 1966 dollars, of the thirteen established and recommended community colleges for which total capital appropriations have not yet been made. These estimates are based on projected enrollments for 1975. On the basis of these figures it would appear that for each of the eight remaining fiscal periods between the present and 1975 (FY 68-75) an average appropriation of between 29.1 and 32.9 millions would be required to bring the community college system into full operation.

Operating Costs

Although this section is concerned with capital costs, it would be worthwhile to look briefly at total operating costs by 1975. On the assumption that $900 is a reasonable cost per student in 1966 and that the projected enrollment of 53,000 is reached by 1975, the total annual operating costs for the community college system would reach $47.7 millions by that date (*in 1966 dollars*). If it is further assumed that the present tuition ($200) remains unchanged, the net annual operating cost to the Commonwealth would be $37.1 millions. It should be remembered that if the instructional programs of the colleges are heavily weighted on the side of occupational education, as is expected, the annual operating costs could be significantly higher.

THE PLACE AND RESPONSIBILITY OF THE SYSTEM'S CENTRAL OFFICE

The statutes governing the Massachusetts Board of Regional Community Colleges quite obviously envision a *system of colleges* under the jurisdiction of this Board. As an operating agency of the Commonwealth there must be a strong, adequately staffed central office to administer the system and carry out the policies established by the Board. Without this the "system" would not be a system but a series of uncoordinated college units. Within the brief history of the community colleges in Massachusetts, this is about what has happened. There seem to have been two reasons for the development of this situation.

It has been the policy of the Board to permit and encourage the greatest possible autonomy for the individual college units. This is a proper and appropriate policy if the colleges are to have freedom and initiative to serve their communities and to develop an institutional and academic integrity of their own.

The other reason why the colleges are more of a "federation" of uncoordinated semi-autonomous units is a negative one, caused by default rather than by conscious policy. The default is simply explained: throughout the life of the community college system there has been a weak central office. The weakness of the central office is just as easily explained (with no criticism of present or previous personnel implied): it has been under-staffed in both professional and supporting personnel, under-financed and under-housed. In these circumstances it has been impossible for the central office to carry out efficiently even its routine responsibilities; certainly it has not been possible for it to undertake the leadership and coordinative functions which are necessary to make a system a system.

From the beginning there have been but two professional staff positions in the central office. Because of the turnover of personnel there have been long periods with only one professional. Since the beginning the system has grown from one college and about 150 students to eleven colleges and nearly 10,000 students.

As the number and size of the community colleges continue to grow, the issue of the role of the central office becomes more critical: either it continues to be staffed and funded to provide only the minimum level of routine services it is now performing inadequately, or it is given what is necessary to provide the kind and level of services it *ought* to be providing. Assuming the latter to be the desirable alternative if the Commonwealth is to have a dynamic, viable system of community colleges, what are the roles and functions which the central office ought to be performing?

Functions of the Central Office

Basically it is the function of the central office to act for the Board of Regional Community Colleges and to administer the policies established by the Board. As the Board's professional and executive staff, it is the further basic responsibility of the central office to develop and recommend policies and procedures to be adopted and established by the Board. These functions are administrative, supervisory, coordinative and operational. To these should be added responsibilities for leadership and liaison.

A system of community colleges is not self-coordinative. Each unit of the system has its own job to do and little enough time, money and staff to do it. Without coordination among all of the units each unit quite inevitably will go its own way, thus defeating the intent and purpose of a system as distinguished from a federation. Coordination of policies and procedures within a broad framework of policy established by the Board is essential. So too is the matter of communication. Unless there are the means and machinery for two-way communication, both the Board and the colleges will be uninformed.

Unless the legislature and its committees and the executive agencies of the state government have information about the community colleges and the needs of the system, budgets cannot be made, personnel policies cannot be established and interpreted and legislative bills cannot be handled intelligently. This is the liaison function of the central office: to develop the data and information needed by these agencies and to interpret the community colleges to them, and conversely, to inform the colleges of the activities and actions of the legislative and executive agencies.

The central office performs many routine services. It is responsible for financial accounting, accounts payable, purchasing and payroll. It is responsible for budget preparation and consolidation of budgets of the individual community colleges. It is responsible for budgetary control. It is responsible for the administration of personnel policies, employment applications and personnel records. These business management and personnel responsibilities grow in volume as the community college system grows.

One of the most important assignments of the central office is the identification and evaluation of campus sites. In regions where the college has already been established this is also a liaison matter; but where a college has not yet been founded the initiative must lie with the central office. After a thorough search and elimination of unsatisfactory sites, it remains for the central office to assemble sufficient information upon which to base acquisition recommendations to the Board and then to carry out the decisions of the Board in this connection. The site having been acquired, capital funds appropriated and architects appointed, it becomes the responsibility of the central office, in liaison with the college and the Bureau of Building Construction, to carry forward the construction project through the manifold steps and innumerable details of educational specifications, site master-planning, preliminary and working drawings, and construction.

Regardless of the degree of autonomy which the Board wishes to assign to the individual colleges, there must be a broad framework of policies established by the Board. It is the responsibility of the central office, working with both the colleges and the Board, to establish, maintain under continuous review and evaluate the state-wide policies which affect the internal operation of the colleges. General policy areas are:

1. **Administrative policies.**
2. **Budget and fiscal policies, including budgetary control, purchasing and disbursements, student financial accounting and student funds, etc.**
3. **Academic policies, including admission, retention, student academic accounting, graduation, degree requirements, etc.**

4. Personnel policies, including recruitment, employment, retention and tenure, salary schedules, perquisites, for administrative and supervisory, instructional, and supporting services personnel.
5. Curriculum and instructional policies.

It is probably not the responsibility of the central office to initiate curriculum development and revision except in special cases. This is within the purview of the college and its faculty. But it is the function of the central office to review and evaluate curriculum recommendations from the colleges, to coordinate them with curriculum activities of the other colleges and to recommend approval or disapproval by the Board.

In its role as spokesman for the community colleges and the Board the central office must maintain liaison and joint planning relationships with a host of other groups and agencies, state, regional and national, public, quasi-public and private which are engaged in activities related to or affecting the community colleges. Considering the myriad number of such agencies and the scope, duplication, overlapping and uncoordinated status of these activities, this responsibility is no small assignment. Yet it is absolutely necessary to keep aware of these diverse and sometimes conflicting activities of other groups lest the community colleges find themselves out of touch or adversely affected.

Research

From the point of view of the Commonwealth, the objective of the community college system should be to provide optimum higher education services of unquestioned excellence to a maximum number of citizens. Research is a *sine qua non* to assess service needs, to evaluate the system and its components and to analyze, document and substantiate information and requests (including budgetary requests) to the appropriate governmental agencies. Thus, a research facility which forms an integral part of the central office is imperative.

There are four "types" (or "levels" or "organizations") of community college research as far as the Commonwealth and the community college system are concerned:

1. Research or scholarly activities of individual faculty members.
2. Intra-institutional research conducted by the individual college at its initiative and related to its institutional problems.
3. Regional Community College Research Center, conducted by and related to the University of Massachusetts.
4. A research arm within the central office, adequately and competently staffed and reasonably supported.

Referring to the fourth type of research, it would seem urgent, while the system is young and procedures are malleable and in view of the projected growth of the community college system and the inevitability of increased automation, that plans be made for the acquisition of, or access to, a high capacity, random access, joint-time data processing and computer system for both production and instruction.

On the production side, much efficiency and economy could be gained through a system-wide facility which could accomplish such routine activities as scheduling, registration, keeping permanent record cards, grade sheets, transcripts, student academic and financial accounting and institutional fiscal and budgetary control through telephonic long-line input and data print-out and display. A total information system is envisioned which would provide, among many other services, for the memory storage of academic records and student personnel data.

On the instructional side, such a system could be linked to the concept of an automated central library and instructional materials center making available variety and quantity of materials impossible for a single institution to provide.

Such an installation would be used by instructors for paper and examination-scoring and for classroom instruction in mathematics and science. As faculty "know-how" grows, the EDP system will be utilized in broader and more varied classroom applications. These applications are now limited by faculty naivete and by the "state of the technology", but are sure to grow as more is known and as experimental opportunity is provided. Unless such an opportunity is provided, this aspect of improved faculty utilization will not be explored nor will the growing state of the technology be assimilated.

Finally, such an installation would provide faculty and colleges with a tool of infinite potential for individual and institutional studies. Its very availabilty would be provocative to the intellectually curious.

A facility such as described would be expensive and relatively sophisticated by present standards. A capital expenditure of the magnitude involved should not be recommended or made unless two additional factors are present: the system should be compatible with minor EDP systems which are now or might subsequently be installed in single institutions; and adequate staffing should be guaranteed in order to extract maximum utilization. It seems obvious from both an organizational and an administrative aspect that the data processing system would be under the jurisdiction of the research arm of the central office.

Research Staffing

On the subject of staffing, the following key personnel would be anticipated, together with a sufficient ratio of clerical and technician support to make maximum use of professional competencies:

1. *Director of Research:* He would rank immediately below and report directly to the Board's President and through him to the Board. His responsibilities would be largely administrative and supervisory; he would plan and coordinate the research arm of the central office. Basic qualifications for the position would require thorough interest, training and experience in educational research and design plus a thorough and congenial orientation to the community college concept probably gained through "firing-line" administrative experience.

2. *Research Specialist:* He would report to the Director of Research. He would be principally responsible for research design and of the identification and initiation of projects. He would also be responsible for the design and implementation of projects initiated by others and for inter-institutional and inter-agency liaison of projects falling under his jurisdiction. By training and experience he should be heavily research-oriented and he should have a basic familiarity with EDP.

3. *EDP Specialist:* The person in this position would report to the Director of Research. He would be responsible for the design and utilization of the EDP system already described and he would therefore need special experience and skills in systems analysis and design.

4. *Specialist for State and Federal Relations:* The person in this position would report to the Director of Research. His responsibility would be for a thorough and continuing familiarity with Federal and state legislation and regulations applicable to community colleges, for leadership in identifying and communicating objectives and funds intended by Congress for the use and strengthening of community colleges, for the identification of projects and the preparation of proposals by the community college system and constituent colleges for the funds and services for which they are eligible, and for providing similar services in relation to private foundations.

The organization of community college research as envisioned herein should provide the colleges and the system with a maximum opportunity to secure information and knowledge about themselves, their clientele and their changing roles in public higher education in the Commonwealth, in order to render the high level of service expected of them.

Curriculum Development

Another function the central office ought to perform, and perhaps in the long run, the most important, is that of leadership and educational statesmanship. While the administration and faculty of each of the colleges are perfectly capable of such creativity on their own campuses and intra-regionally, there are certain areas which require state-wide leadership and coordination. The following paragraphs outline some of these areas, but the list is not exhaustive.

In the area of curriculum development two examples may be cited. One of these is articulation between the high schools and the community colleges and between the community colleges and baccalaureate institutions, particularly public colleges and universities. The matter of student transfers between community colleges and senior colleges ought to be governed by a broad written policy. Such a policy for transfers among public institutions ought to be sufficiently broad to make most transfers automatic and routine; college-by-college course- and credit-matching should be minimized. Such a policy should be negotiated on a state-wide basis and should cover articulation between all the community colleges and all the public four-year colleges. Once established it would be necessary to maintain a continuous review, to develop mechanisms to handle on an *ad hoc* basis the exceptions to the policy, and to provide liaison on such matters as curriculum and degree requirement changes.

Another item of curriculum development requiring attention at the state level is occupational education. The need for new curriculums for new occupations may become evident first as a state-wide need rather than at the regional level. Certain curriculums, currently in health-related fields, are better coordinated at the state level than at the local college level. But the principal need for state-level coordination and statesmanship is in the matter of relationships with the State Bureau of Vocational Education and in the allocation of curriculum responsibilities and Federal funds as between secondary education and the community colleges. The present relationship is not satisfactory and the means of improvement probably would be better negotiated between state-level agencies than between individual colleges and the state agency for vocational education.

Many aspects of the improvement of instruction and the use of new instructional media require leadership from the central office. An example is the development of resources and the "know-how" for use of a state or inter-state system of educational television. Another example is a state-wide electronic data processing system discussed in the previous section on research. Finally, there is the example of the state-wide and even inter-state automation of libraries and library resources. Generally speaking, these and other examples are beyond the staff and financial resources of the individual community colleges and must be approached on a state-wide basis.

Each college needs to maintain an in-service program for the orientation and up-grading of its own staff and faculty. But much more can be accomplished through a continuous state-wide program of meetings, conferences, in-service programs and staff development workshops. One of the least satisfactory aspects of employment for community college faculty and staff is the absence of opportunities to meet with colleagues from other colleges for the interchange of ideas and for discussion with respect to instructional materials and methods. The central office, if it had the resources, should arrange for such interchanges on a subject matter basis, by curriculum, and by administrative areas such as librarians, registrars, counselors and business officers.

These are but some of the areas in which the central office should be providing professional leadership if the community college system is to grow or even maintain its present quality. Without staff and funds these essential functions cannot be provided.

At the present time, two professionals, assisted by the community college presidents sitting as the Presidents' Council, are attempting to accomplish these manifold tasks, duties, functions and responsibilities of the central office. The degree of accomplishment must be obvious! Unless more staff, funds and facilities are provided for the central office, the community college system will not achieve the goal which the Commonwealth expects of it: to afford access by the state's youth to a quality community college opportunity. To provide such a quality program requires much additional staffing at the second and third echelons.

Personnel Required

There are many ways of organizing a central office operation to accomplish its purposes. To a large extent these depend upon the experience and administrative concepts of the chief officer. The following paragraphs are not intended to describe an organization, but rather to list some areas of administrative responsibility. If the chief officer had the staff to delegate these responsibilities, he would be freed to perform his real function, that of leadership, statesmanship and administrative coordination.

As a minimum, assuming the size and scope of development of the community college system envisioned by this Master Plan in the next ten years, the following professional personnel are needed in the central office in addition to the President of the Board of Regional Community Colleges, each with supporting services personnel adequate to accomplish his assignment:

An officer for liaison with the General Court, its members and its committees, and with other state agencies. This would be an expanded assignment for the present Executive Director.

An officer for business and fiscal affairs. Regardless of how this assignment is organized, this officer would probably need not less than four third echelon staff members for purchasing, accounting and payroll, accounts payable, budgets and budgetary control.

An officer for curriculum development and improvement of instruction. This officer would need the assistance of four third echelon staff members: technical occupations, business and government-related occupations, health-related occupations, instruction and instructional media, including libraries.

A director of research. This officer and related personnel are described in the section dealing with research.

A planning officer. This officer would have the responsibility for long-range planning. He would also be responsible for site evaluation and acquisition and for liaison between the colleges, the Bureau of Building Construction, architects and other agencies and individuals on construction projects.

A personnel officer. This person would be responsible for faculty recruitment, evaluation of *curriculum vitae,* personnel accounting, evaluation of appointment recommendations, and contacts with universities both for the purpose of recruitment and to develop pre-service and in-service teacher training programs.

To summarize, in addition to the present positions of President and Executive Director five additional second echelon positions should be established, each reporting directly to the President, and eleven additional third echelon positions should be created. With this staff plus the necessary supporting services personnel, it would be reasonable to expect the community college system now and for the next ten years to achieve the goals established for it by the Commonwealth through the leadership of the central office.

CONCLUSIONS AND RECOMMENDATIONS

1. In another ten years or less the Board of Regional Community Colleges should undertake another Master Plan Study which would have the same objectives as this one:

   a. To appraise the then status of community colleges in Massachusetts in relation to this plan and other criteria, including the Commonwealth's effort in supporting and extending the community college system.

   b. In the light of up-to-date data at that time to project the needs of community colleges for another forward period. (See p. 1; mimeo full text, p. I-5.)

2. The Presidents' Council should recommend and the Board should adopt as a matter of policy a statement governing the minimum and maximum size of community colleges. Such a policy would protect the Board and the legislature from the demands of communities for a community college of "their own" and would provide a policy basis for sub-dividing regions and for establishing new colleges when enrollment ceilings have been reached. (See pps. 4, 19, 23; mimeo full text, p. II-11-12.)

3. The Presidents' Council should recommend and the Board should adopt as a matter of policy a statement of the functions and purposes of community colleges. The purpose of this recommendation is to spell out with a little more precision and subject to periodic review the statutory jurisdiction and authority allocated to the Board and to the community colleges. (See pps. 5-6; mimeo full text, p. II-22-24.)

4. The Board should recommend and the legislature should support evening and summer school higher education on the same basis as full-time higher education. Appropriations should be made for these purposes and the requirement that they be self-supporting should be removed. (See p. 6; mimeo full text, p. II-37.)

5. The community colleges should strive to qualify for and should seek regional accreditation as soon as possible. (See p. 7; mimeo full text, p. II-43; p. VIII-11.)

6. A state-wide master plan for vocational and occupational education should be developed. It should involve all levels and all agencies engaged in vocational and occupational education and should result in a comprehensive plan to serve the total needs of the Commonwealth. (See p. 9; mimeo full text, p. IV-20.)

7. Pending development of this master plan, the state's plan required under the Vocational Education Act of 1963 should be immediately revised, with the full and complete participation of community college authorities, so as to incorporate into the plan a proper role and share of responsibility and funds for the community colleges. (See pps. 8-9; mimeo full text, p. IV-16.)

8. Section 26, Ch. 572, Acts of 1965, which permits the granting of the Associate in Applied Science degree, for thirteenth- and fourteenth-year programs in area vocational schools, even though carefully circumscribed, should be amended or repealed. The awarding of collegiate degrees for non-collegiate programs is contrary to all common and accepted practice in education. (See p. 9; mimeo full text, p. IV-27; p. IV-40.)

9. The University of Massachusetts, with the advice and cooperation of the community colleges, should initiate teacher education programs, both pre-service and in-service, to prepare community college teachers, especially those in occupational education. (See p. 9; mimeo full text, p. IV-28.)

10. Comprehensive analysis of future manpower needs is a necessity in establishing a sound basis for educational program planning. Particular mention must be made of the urgent need for comprehensive and consistent state and area economic studies and for firm, medium-range and long-term occupational projections. Furthermore, there is a great need for coordinative planning to define and render consistent educational and manpower policy and to integrate the programs of community colleges and vocational training efforts. Appropriate agencies such as the U.S. Bureau of Labor Statistics and the Massachusetts Division of Employment Security must be encouraged to undertake substantive research to provide medium- and long-range projections by occupation. Without these data in the form, area and occupational detail needed educational projection and planning can be based only on assumption and conjecture. (See mimeo full text, p. V-3; p. VI-17-18.)

11. The current level of the Commonwealth's appropriation for libraries simply will not permit the acquisition of books and materials at a satisfactory rate. The present annual appropriation is $100,000 for all colleges, as it has been for several fiscal periods, regardless of the number of colleges to share the appropriation. It should be at least doubled and preferably trebled. In addition, there should be an appropriation of $50,000 for stocking the initial library collection of each new college, instead of the present allotment of $25,000. (See p. 12; mimeo full text, p. VII-8-9.)

12. The Commonwealth should work to bring its support level for community colleges as quickly as possible to an average of $700 per student (in 1966 dollars). With the student tuition of $200 this would bring the average operating funds per student to $900, which can be considered only a minimum. Unless the current inflationary trend is stabilized or reversed, it is likely that this goal, by the time it can be achieved, will itself be substandard. Thus the state should set an objective in the next ten years (by 1975) of $800-$900 per student, which, assuming student tuition to remain constant at $200, would mean a realistic operating cost per student by 1975 of $1,000-$1,100. (See p. 34; mimeo full text, p. VII-32.)

13. The present budgeting formulae for staffing community colleges is inadequate.

a. The state's staffing formula for administrative and non-instructional personnel should be amended to provide sufficient positions in these categories in order that the diversion of instructional positions and funds would not be necessary in order to obtain imperative administrative and non-instructional services. The same recommendation applies to clerical support positions and funds.

b. A different and/or more generous budgeting formula for instructional positions should be developed. The present 18:1 staffing formula is not sufficient for quality college-level instruction. (See p. 12; mimeo full text, p. VII-38-41.)

14. None of the community colleges has been opened on the basis of more than a very few months of "crash" planning, including the renovation of facilities. The order of establishment, the regions to be served and the location of colleges within regions have not been the result of a long-range plan. Decisions as to where and when colleges are to be established have been tardy and subject to local community enthusiasms and other non-educational factors.

a. The Board of Regional Community Colleges should adopt a plan and order for the establishment of colleges, either as recommended in this Master Plan or another.

b. Funds ("seed money") should be provided by the state sufficient to employ a president with a core of key staff including clerical support for *at least* a year prior to the date the new college is expected to open. (See pps. 30-33; mimeo full text, ch. VII.)

15. Transfer relationships between public community colleges and senior colleges and universities should be systemized and made routine as early as possible. Probably this matter would best be handled through the initiative of the community colleges central office, perhaps with the cooperation and good offices of the Board of Higher Education. An official or unofficial inter-college committee on a continuing basis is likely to be necessary to maintain and reappraise the relationships thus established. (See p. 17; mimeo full text, p. VIII-4.)

16. By 1975, the Board of Regional Community Colleges should have established seventeen community colleges (including the Springfield Technical Institute, transferred to the Board of Regional Community Colleges by Ch. 273, Acts of 1967). In addition to the twelve colleges already established (including the Springfield Technical Institute) five more colleges are needed in the following geographical regions and in the order listed:

Plan A	*Plan B*
1. West Suburban	1. West Suburban
2. South Shore	2. Southwest Boston
3. Southwest Boston	3. Northwest Suburban
4. Northwest Suburban	4. South Shore
5. Southwest Suburban	5. Southwest Suburban

(See pps. 30-33; mimeo full text, p. IX-61-65.)

17. For the colleges already established the following order of construction of permanent facilities is recommended:

1. Massachusetts Bay
2. North Shore
3. Greenfield
4. Mt. Wachusett
5. Quinsigamond
6. Holyoke

It is assumed that the Springfield Armory site is a permanent location for the Springfield Technical Institute. Cape Cod, Northern Essex, Berkshire, Massasoit and Bristol already have all or part of their capital appropriations for construction. (See pps. 26-28; mimeo full text, p. IX-51-56.)

18. Campus planning requires an over-all guide figure of about 130-150 gross square feet per student, including approximately 30 per cent for walls, corridors, lobbies, utilities, mechanical spaces and "public space". In 1966 dollars the capital cost will range between $5,100 and $5,750 per student. Based on an assumption of 135 gross square feet per student, the total capital cost per square foot including equipment, construction and related costs and contingencies will be $37.77-$40.57; of this amount, construction costs, including site acquisition and site development, architects' fees and other incidental costs and contingencies, would be between $25.18 and $27.04. The total capital cost (in 1966 dollars) to implement the community college system herein recommended for the thirteen colleges, both those established but for which total capital appropriations have not yet been made and the additional colleges recommended but not yet established, would be between $233,070,000 and $262,775,000. On the basis of these figures, each of the eight fiscal periods between the present and 1975 (FY 68-75) would require an average appropriation of between 29.1 and 32.9 millions. (See pps. 33-34; mimeo full text, p. XI-6-10.)

19. Based on the assumption that $900 is a reasonable cost per student in 1966 and that the projected enrollment is reached by 1975, the total annual operating costs for the community college system would reach $47.7 millions by that date (in 1966 dollars). If it is assumed further that the present tuition ($200) remains unchanged, the net annual operating cost to the Commonwealth by 1975 would be 37.1 millions. If the instructional programs of the colleges are heavily weighted on the side of occupational education, as is expected, the annual operating costs would be significantly higher. (See p. 34; mimeo full text, p. XI-8-9.)

20. A research facility forming a part of the central office adequately staffed and funded is imperative. (See pps. 36-37; mimeo full text, p. XII-6-14.)

21. It is urgent, while the system is young and procedures are malleable and in view of plans for the growth of the community college system and the inevitability of increased automation, that plans be made either for the acquisition of or access to a high capacity, random access, joint-time data processing and computer system, for both production and instruction. (See p. 36, mimeo full text, p. XII-11-13.)

22. It is recommended that five second echelon and eleven third echelon positions be established in the central office:

- Business and Fiscal Affairs
  - Budgets and budgetary control
  - Purchasing
  - Accounting and payroll
  - Accounts payable
- Curriculum Development
  - Technical occupations
  - Business and government-related occupations
  - Health-related occupations
  - Instruction and instructional media
- Research
  - Research specialist
  - Data processing specialist
  - State and Federal programs specialist
- Planning
- Personnel

It is assumed that adequate office space and facilities will be provided for the central office staff. It is further assumed that adequate supporting services personnel will be provided for the new positions recommended. (See pps. 38-39; mimeo full text, p. XII-16-18.)

ADDENDUM TO

A Master Plan for Massachusetts Community Colleges through 1975

A SUMMARY REPORT

Since the development of the Master Plan required the identification of a point in time when the status of community colleges in the Commonwealth of Massachusetts could be studied and compared, this Report was not intended to, and therefore does not, reflect what has happened since the time of the study.

To enumerate the various changes which have taken place would require an addendum of inordinate length. By way of summary: major emphasis has been placed on the development of occupational programs to the extent that in the fall of 1967 almost 55% of the students enrolled at the 12 community colleges were pursuing courses in the nontransfer or occupational curriculums. In the fall of 1968, there will be Associate Degree Programs in Nursing in 9 community colleges; negotiations are underway for expanded offerings in the related health occupations fields. Police and/or fire science courses are being offered in 7 colleges. The following table is the fall report of the total enrollment for the current academic year:

Community College	Full-Time Day Students	Part-Time & Evening Students	Summer Enrollments	Total Enrollments
Berkshire	812	550	484	1846
Bristol	822	447	264	1533
Cape Cod	649	550	294	1493
Greenfield	630	428	172	1230
Holyoke	1522	804	1214	3540
Massachusetts Bay	1278	622	1861	3761
Massasoit	781	263	106	1150
Mount Wachusett	709	463	246	1418
Northern Essex	1251	406	493	2150
North Shore	1240	571	567	2378
Quinsigamond	1242	657	1238	3137
Springfield Technical Institute	786	-	-	786
Total Enrollments	11,722	5,761	6,939	24,422

The current state recommendations for budgets for the academic year 1968-69 do not reflect the needs and growth of the system and, if adopted, will seriously curtail the present offerings, let alone provide for the development of new occupational programs and community service. Since these budgets will be discussed at legislative hearings, there is still an opportunity to recoup some of the losses reflected in the present budget recommendations.

Present facilities for 10 of the community colleges preclude expanding their enrollments, except in so far as additional space may be rented in the region. The development of new campuses is in process. The first projects were necessarily slow, but a reduction of elapsed time between authorization and contracts is noted. By the end of the academic year 1968-69, 5 colleges should be under construction, with planning money in hand for 3 more. These projects will replace the current facilities which were formerly public school buildings.

February 1968

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Regional Community Colleges